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Commonwealth of Pennsylvania

# REPORT

OF THE

# Department of Mines

## OF PENNSYLVANIA

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Part I—Anthracite

1912

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HARRISBURG, PA.:  
WM. STANLEY RAY, STATE PRINTER  
1913





## LETTER OF TRANSMITTAL

Department of Mines,  
April 1, 1913.

To His Excellency, John K. Tener, Governor of Pennsylvania:

Sir: In compliance with the Act of Assembly of April 14, 1903, I beg to submit herewith, for transmission to the General Assembly, the report of the Department of Mines for the year ending December 31, 1912. Part I covers in detail the operations in the twenty-one Anthracite Districts, and Part II the operations in the twenty-six Bituminous Districts, as returned by the Inspectors. Observations and suggestions are also offered relative to mining subjects.

Respectfully submitted,

JAMES E. RODERICK,  
Chief of Department of Mines.



# REPORT

## OF THE

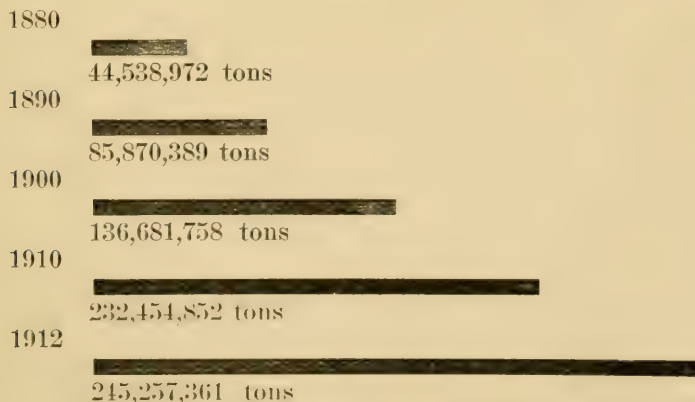
# DEPARTMENT OF MINES

### INTRODUCTION

Pennsylvania enjoys the distinction of having made a new high record in the production of coal in 1912, the aggregate output having reached the enormous volume of 245,257,361 short tons, of which 84,426,869 tons were anthracite and 160,830,492 tons bituminous. The highest previous tonnage was 235,615,459 tons in 1907. The great output of 1912 equals about one-half of the entire tonnage of the United States and about one-fourth of the tonnage of the world.

The rapidity of the development of the coal trade in Pennsylvania, as well as in some of the other States, has been very remarkable. From 44,538,972 tons in 1880, the production has steadily increased until the wonderful output of 1912 was reached. As coal is the foundation on which most of the great industries of the State are built, it is obvious that business interests generally have had a period of marked prosperity.

Pennsylvania's production, 1880-1912, short tons



In the 33 years, 1880-1912, the unprecedented increase of over 428 per cent. was accomplished, but the next 33 years will probably show slight, if any, increase, except in the bituminous region.

One of the many notable features connected with Pennsylvania is the great number of large-producing mines. There are 458 mines that produce over 200,000 short tons each annually. In the anthracite region there are 178 and in the bituminous 280. The Prospect Colliery of the Lehigh Valley Coal Company, in the anthracite region, produced 1,152,690 tons in 1912, and the Woodward Colliery of the Delaware, Lackawanna and Western Railroad Company produced 1,012,329 tons. In the bituminous region, the Vesta No. 4 mine, of the Vesta Coal Company, produced the remarkable output of 1,555,420 tons.

The great tonnage of the year had a value at the mines of approximately \$350,000,000. The receipts from the final sales of the coal to the consumer would probably aggregate \$700,000,000. Both the bituminous and anthracite outputs were curtailed by the suspension pending the settlement of the wage controversy, and also by the car shortage and the inability of the operators to obtain a full complement of miners and miners' laborers.

In the bituminous trade there is the usual complaint regarding low prices, but this is a condition that is unavoidable as long as the output is unrestricted and the present cut-throat methods are followed. Without some co-operation between the producers to stop the cutting of prices, no improvement in this respect can be hoped for, and although the output may be very large, the monetary returns are frequently unsatisfactory. This condition does not apply to the anthracite region. The coal produced by the great anthracite corporations is regulated in quantity and in price, with the result that profits are large.

In the anthracite region a four-year contract has been signed by the operators and miners, and in the bituminous region a two-year agreement has been entered into. It was not without some difficulty that these matters were settled between the operators and miners. The conditions of these contracts will probably increase somewhat the cost of production, but to offset this phase of the trade there will be four years of peace in the anthracite region and two years in the bituminous region.

The export trade increased to an unusual extent during the year and it seems probable that American coal may have established a much larger permanent market abroad. The nation-wide strike of the British miners afforded an opportunity that the producers of this country promptly availed themselves of, and it is to be hoped that the benefits will be more than temporary.

The coke production amounted to 24,682,474 short tons during the year, the largest on record, and as the prices averaged high, at times reaching the record price of \$4.00 a ton, the year can be accounted one of the most prosperous in the history of the industry. The coke industry, although not as prominent as the coal industry and not as frequently referred to, has, nevertheless, a history full of interest. The making of coke from coal was an idea born of necessity. The demand for fuel for heating and smelting purposes was so great, and the old methods of using wood and charcoal were so utterly inadequate, that the idea was conceived of making coke by burning coal in open kilns, for a certain length of time and then checking com-



bustion by turning a stream of water on the burning mass. The idea was ridiculed as being impracticable. It was not believed that partially burned coal could possibly give out more heat than coal in its original state. The tests made, however, proved conclusively that the idea was not a mere fancy, and the adaptability of coke for use in blast furnaces for smelting iron from the ores was soon established.

The methods in vogue at first were necessarily crude and the price of coke accordingly high.

The necessity for improvement again manifested itself and the evolution of the bee-hive oven followed. This oven gave satisfactory results and has been in use for many years. It is still popular, but recently what is known as the rectangular oven has been introduced and is gradually supplanting the bee-hive oven. It produces more coke and is more easily maintained, although, according to some authorities, it does not produce as fine a quality of coke.

The year was also notable in a legal sense. The Interstate Commerce Commission made numerous decisions regarding freight rates, conspicuous among which was the decision in the matter of the Pittsburgh-Lake rates. Another notable case was that relating to the Connellsville Coke Manufacturers, which is still pending. In one of the States, the highest court handed down a decision that the railroads must furnish cars in the number asked for if their capacity equaled the demand. The case, however, that attracted most attention was the one of the Government against the so-called Anthracite Coal Trust, of which mention is made elsewhere in this report.

The question of the safety of mines and protection of employes, along with first aid training, took a prominent place among the incidents of the year. There were many first aid meets and numerous demonstrations of methods for the lessening and prevention of accidents. The International Safety and First Aid Meeting held at Pittsburgh during September was, perhaps, the most important event of this kind, and undoubtedly advanced the cause of safety in mines.

Pennsylvania has taken the lead in the matter of proposed mining legislation. Early in the year Governor Tener appointed a commission to revise the anthracite mining laws, and he also named a commission to draft a new workmen's compensation law. Both matters will be acted upon by the legislature.

## COAL PRODUCTION IN PENNSYLVANIA, 1912

The table herewith shows by districts the average number of days worked, the production, the average production per day and the estimated production on a basis of 280 working days; also the total production, the total average production per day and the total estimated production of 280 days

Districts	Average number of days worked in breaker.	Production in tons of 2,000 pounds.	Average production per day.	Estimated production of 280 days.*
First, .....	207	2,597,345	12,060	3,376,800
Second, .....	201	5,305,892	24,773	6,936,440
Third, .....	202	4,558,349	21,174	5,928,720
Fourth, .....	221	4,561,943	16,888	4,728,640
Fifth, .....	196	3,507,741	17,025	4,767,000
Sixth, .....	204	5,326,737	26,111	7,311,080
Seventh, .....	207	5,993,173	27,654	7,743,120
Eighth, .....	206	4,288,146	19,573	5,480,440
Ninth, .....	213	5,735,250	24,932	6,980,960
Tenth, .....	224	4,844,642	20,830	5,832,400
Eleventh, .....	228	5,853,338	25,173	7,048,440
Twelfth, .....	245	3,130,459	12,777	3,577,560
Thirteenth, .....	237	2,960,338	11,484	3,215,520
Fourteenth, .....	201	3,454,295	17,186	4,812,080
Fifteenth, .....	224	3,376,376	14,877	4,165,560
Sixteenth, .....	229	3,126,189	13,411	3,755,080
Seventeenth, .....	254	4,694,703	16,576	4,641,280
Eighteenth, .....	218	2,984,284	13,689	3,832,920
Nineteenth, .....	241	3,505,339	14,871	4,163,880
Twentieth, .....	247	2,609,759	9,286	2,600,080
Twenty-first, .....	213	2,012,571	8,760	2,452,800
Totals and averages, .....	220	84,426,869	369,110	103,350,800

\*Production from washeries not included.

## WORKMEN'S COMPENSATION

Compensation for injured workmen and their dependents has for many years been a subject of study in all civilized countries, but it is only recently that it has received general attention in the United States. Public opinion has been aroused, however, and strongly favors the adoption of some system of legislation that will accomplish the end in view. It is an economic and sociological reform that cannot be very much longer delayed. In fact at least a dozen states have already adopted laws on the subject, and it is only proper that Pennsylvania, the acknowledged leader in American industrial affairs, should make every effort to meet this great question in an intelligent and comprehensive manner. This, we are glad to say, is being done.

By legislative action Governor Tener, during the session of 1911, was authorized to appoint an Industrial Accidents Commission to investigate two subjects, namely, the prevention of industrial accidents, and the compensation of injured workmen and their dependents, and make report to the Legislature of 1913.

The Commission has presented to the Legislature for adoption bills covering the subjects named.

The method of compensation proposed is known as elective compensation by employer to employee. After a careful study of existing laws on the subject now in force in other states and countries, this method was adopted as the most desirable and most likely to yield satisfactory results.

Two very great difficulties have been encountered heretofore in the efforts made to secure successful legislation of this kind. The first was its unconstitutionality, it being held that it would be doing violence to the constitutional rights of the employer to compel him to compensate his employes who are injured without any fault on his part. It is suggested that this difficulty will be overcome by making a compensation schedule that is optional instead of obligatory.

The other principal obstacle has been the difficulty of fixing a fair compensation. Many theories have been advanced, but it will require years of experience to determine what is right in this respect. Undoubtedly the difficulties will eventually be overcome and the great army of workers, who are the dynamic force back of our manifold industries, will sooner or later receive a just compensation when injured and the persons who are dependent upon those who are killed will be satisfactorily provided for.

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### COMPENSATION ACT

The Compensation Act as drafted and presented to the Legislature by the Commission appointed by Governor Tener has created a great deal of excitement among the Members, as well as among the people in general. The workingmen of the State were all in favor of the passage of the Bill as presented, but many business and professional men argue that the proposed act is too drastic and are of the opinion that a compromise should be made. Most of the smaller employers of labor in the various industries are also against the Act, as are the farmers, and at this writing it is hard to say what the outcome will be. Some persons are opposed to a Compensation Act of any kind, but the great majority of the people believe that such a measure, if fair to all interests, should be enacted.

Many of the coal operators insist that the Act as now presented will add an additional expense of from 6 to 8 cents on every ton of coal produced. I do not agree with their estimate, but admit that it will add from 2 to  $2\frac{1}{2}$  cents a ton to the cost of production.

To satisfy those who are skeptical on the subject, the following Table has been prepared which will show that  $2\frac{1}{2}$  cents a ton on 70,000,000 tons produced will provide enough revenue to take care of the dead, the injured, the widows and orphans, and at the end of fourteen years would leave on hand the handsome balance of \$4,233,733.

The production of coal sent to market during 1912 was 73,462,014. The coal below pea size, amounting to 3,462,014 tons, has been deducted. It is assumed that 70,000,000 tons is a fair average estimate of coal marketed of the size of pea coal and upwards.

The average number of non-fatal accidents reported for the last five years was 1,070. I have assumed in the Table the number of 1,200 accidents, and knowing that the number will be greatly increased when every injured person is put on the pay roll, have made that number four-fold, or 4,800 non-fatal accidents per year, and have assumed that each injured person will receive an average of \$75 benefit, which, while probably too high, is on the safe side.

Relief Fund for Widows and Orphans and Disabled Employees, Anthracite Region of Pennsylvania; Annual Contribution of Coal Companies, \$1,750,000  
(Two and a half cents a ton on an estimated production of 70,000,000 tons)

	First Year	Second Year	Third Year	Fourth Year	Fifth Year	Sixth Year	Seventh Year
Contribution, .....	\$1,750,000 00	\$1,750,000 00	\$1,750,000 00	\$1,750,000 00	\$1,750,000 00	\$1,750,000 00	\$1,750,000 00
Balance, .....	.....	1,117,840 00	2,061,008 80	2,841,144 98	3,470,119 88	3,960,042 28	4,323,263 13
Interest, .....	.....	22,356 80	41,220 18	56,822 90	68,402 40	78,200 85	86,465 26
Principal, .....	\$1,750,000 00	\$2,890,196 80	\$3,852,228 98	\$4,647,967 88	\$5,289,522 28	\$5,889,243 13	\$6,159,728 39
Amount paid out to 800 orphans, @ \$3.00 per week, .....	\$124,800 00	\$240,708 00	\$347,724 00	\$445,848 00	\$535,080 00	\$615,420 00	\$686,868 00
Amount paid out to 336 widows @ \$5.00 per week, .....	\$7,300 00	168,480 00	243,360 00	312,000 00	374,400 00	430,560 00	480,480 00
Amount paid out to 4,800 injured @ \$75.00 each, .....	360,000 00	360,000 00	360,000 00	360,000 00	360,000 00	360,000 00	360,000 00
Amount paid out for 600 funerals @ \$100.00 each, .....	60,000 00	60,000 00	60,000 00	60,000 00	60,000 00	60,000 00	60,000 00
Total amount paid out, .....	\$632,160 00	\$829,188 00	\$1,011,684 00	\$1,177,848 00	\$1,229,480 00	\$1,465,980 00	\$1,587,348 00
Balance in bank, .....	\$1,117,840 00	\$2,061,008 80	\$2,841,144 98	\$3,470,119 88	\$3,960,042 28	\$4,323,263 13	\$4,572,399 39



## Relief Fund for Widows and Orphans and Disabled Employees—Continued

	Eighth Year	Ninth Year	Tenth Year	Eleventh Year	Twelfth Year	Thirteenth Year	Fourteenth Year
Contribution, .....	\$1,750,000 00	\$1,750,000 00	\$1,750,000 00	\$1,750,000 00	\$1,750,000 00	\$1,750,000 00	\$1,750,000 00
Balance, .....	\$4,572,350 33	\$4,720,244 00	\$4,779,960 88	\$4,764,900 10	\$4,638,698 10	\$4,565,254 06	\$4,498,752 24
Interest, .....	91,447 61	94,404 88	\$5,599 22	\$6,238 00	38,773 96	91,305 28	88,175 71
Principal, .....	\$6,413,823 00	\$6,564,648 88	\$6,625,560 10	\$6,610,198 10	\$6,532,472 06	\$6,406,569 34	\$6,246,961 05
Amount paid out to 800 orphans, @ \$3.00 per week, .....	\$749,424 00	\$802,083 00	\$847,860 00	\$883,740 00	\$910,728 00	\$928,824 00	\$938,023 00
Amount paid out to 336 widows @ \$5.00 per week, .....	\$24,160 00	\$25,600 00	\$27,300 00	\$28,760 00	\$30,430 00	\$32,000 00	\$33,600 00
Amount paid out to 4,800 injured @ \$15.00 each, .....	\$72,000 00	\$80,000 00	\$86,000 00	\$91,000 00	\$96,000 00	\$101,000 00	\$106,000 00
Amount paid out for 669 funerals @ \$100.00 each, .....	\$66,900 00	\$66,900 00	\$66,900 00	\$66,900 00	\$66,900 00	\$66,900 00	\$66,900 00
Total amount paid out, .....	\$1,693,584 00	\$1,784,683 00	\$1,860,660 00	\$1,921,500 00	\$1,997,208 00	\$1,997,784 00	\$2,013,223 00
Balance in bank, .....	\$4,720,244 00	\$4,779,960 88	\$4,764,900 10	\$4,638,698 10	\$4,565,254 06	\$4,498,752 24	\$4,423,732 05

The number of lives lost during 1912 was 601. Only 600 have been used, and in each case \$100 is allotted for burial expenses. The number of widows is 336, to each of whom \$5.00 a week is allowed, and 800 orphans, to each of whom \$3.00 a week is allotted.

It is my opinion that the Table herewith will satisfy the operators of the anthracite region that 2½ cents a ton put aside by each company, and deposited in a central bank, would be a sufficient sum to care for the dead, the widows, the orphans and the injured.

In this twentieth century, it is a great shame that the State of Pennsylvania does not rise up in its might and insist that those dependent on the persons who have lost their lives while working in mines, on railroads, in factories and at other occupations, be properly cared for. I hope that the Compensation Bill will be passed so as to safeguard the unfortunate dependents.

In arriving at the number of widows to be taken care of each year, it is assumed that by death and remarriage the number will be constantly depleted at an average rate of about 7 per cent. The number estimated, 336, would, therefore, be reduced to 312 the second year, 290 the third year, and so on. Each annual series of beneficiaries is treated in the same way, and by this method at the end of fourteen years, the first 336 will have passed beyond the relief period, either by death or remarriage. Of course, there will be exceptional cases where widows may live for many years unmarried and will have to be taken care of, but the average number to be taken care of will, in all probability, not be as great as given in the Table.

In dealing with the orphans it is assumed that an average number of 57 out of each 800 will annually pass out of the beneficiary period by reaching the age of fourteen years or by death. It will be understood, of course, that when children reach the age of fourteen they are no longer recipients of any portion of this fund. Taking 800 children for the first year there will be among that number children of all ages from 1 to 13. Those who are 13 years of age will pass out in one year, those who are 12, in two years, and so it will continue until at the end of fourteen years the number passing out will equal the number coming in.

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## AIDS TO EDUCATION IN THE COAL REGIONS

Efficiency and conservation are two popular and prominent subjects of discussion in the business world today. The reason lies in the fact that the struggle for existence is daily growing harder and competition keener as the population increases and the national resources diminish. Our growth as a nation and as a state has been due in large measure to the rich natural resources stored away in the earth to which we have had access and through the utilization of which we have achieved commercial prestige and prominence. These resources are beginning to show signs of exhaustion or they have at least been very greatly depleted, and a most vital question now is, What can be done to conserve what still remain?

Efficiency of labor will do much to accomplish the desired result. Efficiency will also do much in all lines of effort to increase wealth and eliminate waste. Therefore, it is that the universal cry is for greater efficiency.

The whole world is awakening to this obvious and insistent demand of present economic conditions. It is felt in all industrial centers and to meet it there is a constantly growing effort to raise the standard of efficiency in every department of human activity.

The mining regions of Pennsylvania have come under the beneficial influence of this very general movement and in many localities educational facilities, unique in character, but of real practical value, are freely offered to those who care to avail themselves of the privilege. The Mining Institutes and Vocational Schools in the coal regions are both new projects that are doing much to better conditions. The Mining Institutes are a combination of a lecture course and a debating society and have attained to considerable popularity as a means of education. The Vocational Schools conducted by the coal companies are destined to do a most valuable work. They afford opportunity for the acquirement of knowledge on many important subjects connected with mining and are of valuable assistance to the student who is earnest and sincere in his desire for improvement. As is the case with all forms of education, no matter how primitive or elemental, the Mining Institutes and Vocational Schools serve not only to equip the student for a special line of work, but they also broaden the mind and in a general way increase mental efficiency.

By these free and easily accessible methods of education, the miners, if ambitious, may fit themselves for higher positions, and their children, who may just be entering upon their careers in the busy world, may do much to increase their efficiency in whatever field of activity they choose to enter.

So great has become the interest in Vocational Schools, and the results attained have been so satisfactory, that the Legislature has been asked to assist in extending the work by making an appropriation of \$250,000 for the purpose of establishing and maintaining schools of this character throughout the State.

The Young Men's Christian Association is also lending valuable aid in the educational privileges it affords young men, and the Scranton Correspondence Schools have for a long time been offering most practical and at the same time inexpensive courses of instruction, of which many thousands of young men and women have availed themselves.

The Delaware, Lackawanna and Western Railroad Company, through its Mining Department, has published a book entitled "Mine Accidents and Their Prevention," prepared by J. H. Dague and S. J. Phillips. By the means of excellent illustrations and clear intelligent text, information regarding safe methods of mining coal and also regarding the acquirement of the elements of the English language are imparted in a most effective manner. The Preface sets forth the two-fold purpose of the book as follows:

"First, to make all Mine-Workers more familiar with safe methods of mining hard coal, in order that many of the more common accidents attendant upon this hazardous occupation may be avoided and the lives of the workmen may be preserved to the industry and to those dependent upon them.

Second, to give a knowledge of colloquial English to the non-English speaking Mine-Workers in order that they may understand their orders intelligently and thus be better able to help themselves and protect their lives against the dangers of the mine.

The plan has been to incorporate in a permanent form more than



two hundred pictures which have been taken in the mines and have been used with telling effect in stereopticon lectures before immense gatherings of mining men.

The pictures have been arranged in series. Each series shows an accident. The first part of the series shows how the accident happens and the last part shows how the accident might be avoided. Some of the pictures are inserted herewith.

The main principle of the lessons has been to tell the story of the pictures in a series of short, pointed sentences arranged in logical sequence so that the general flow of thought will not be broken. The plan of the Roberts' Lessons of English for Coming Americans published by the International Committee of Young Men's Christian Association, which has been used so successfully for a long time in teaching English to foreigners, has been closely followed and in accordance with this scheme the verb has been given great prominence as this is considered the most difficult element of the language.

The basic idea of these lessons, namely, the making of series of photographs to show the successive stages in the occurrence and prevention of an accident originated with R. A. Phillips, Superintendent Coal Mining Department, Delaware, Lackawanna and Western Railroad Company, and it is due to his persistent effort that it has been possible to carry to completion the present work.

This selection of pictures was not made at random but is based on the Annual Reports of the Department of Mines of Pennsylvania. These Reports have been carefully studied and only those accidents which have been of most frequent occurrence and the most fruitful in loss of life or limb have been chosen for this work.

These pictures have been procured with a great expenditure of money and of painstaking effort, and much time and energy have been devoted to the preparation of the lessons. Every lesson has been carefully thought through and has been arranged with the view of making the special point to the pictures stand unmistakably in the foreground so that there may be no mistaking the particular point of mine law which covers the accident in question.

There has been appended to the mining lessons a number of lessons on American Citizenship especially prepared for this book by W. J. Torrey, Esq., who has been closely connected with the Young Men's Christian Association work for Immigrants in Scranton.

It is earnestly desired that all into whose hands this book may come will do their part in helping it to accomplish the good for which it is intended."

#### "NOTE TO TEACHERS

It is not expected that these lessons will give the men a complete mastery of English, but they are intended to give the non-English speaking miner a good understanding and use of the language used in the mines. To get best results the teacher will observe that in every lesson three distinct steps must be followed. (1st) Conversation based on the pictures; (2nd) Reading the lesson; (3rd) Writing the lesson.

The picture is the soul of the lesson and contains all the material treated in the lesson. Before any attempt whatever is made at reading the lesson, it should be thoroughly mastered in conversation, according to the principles used in teaching the Roberts' System.





Miner Knocks Out Prop With Hammer



Rock Falls on Miner

### KNOCKING OUT A PROP WITH A HAMMER

stands	: The prop stands in the chamber.
made of	: The prop is made of wood.
holds up	: The prop holds up the rock.
knock out	: The miner will knock out the prop.
raises	: The miner raises the hammer.
strikes	: He strikes the prop with the hammer.
knocked out	: The prop is knocked out.
falls down	: The prop falls down.
falls on	: The rock falls on the man.
killed	: The man is killed.

Of what is the prop made? What does the miner want to do? Is there loose rock over the prop? With what does the miner strike the prop? When the prop falls what happens? Is the miner killed? Is it safe to knock out a prop with a hammer? Why is it not safe?

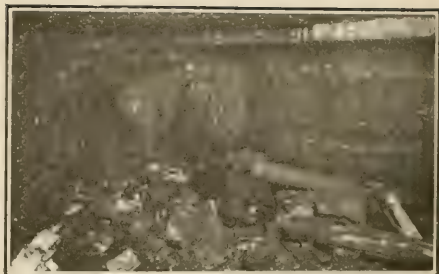
NEVER KNOCK OUT THE PROP WITH THE HAMMER



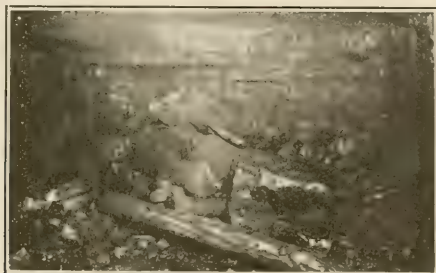




Two Props Standing and Miner Lighting Squib



Props Are Knocked Out by Shot



Miner Hurt by Fall of Rock

### PROPS KNOCKED OUT BY A SHOT

see	:	We see two props in this chamber.
hold up	:	The props hold up the top.
tamped	:	The hole has been tamped.
lights	:	The miner lights the squib.
shouts	:	The miner shouts, "Fire! Fire!"
runs back	:	He runs back to the cross-cut.
goes off	:	The shot goes off.
returns	:	The miner returns to the face.
blown out	:	He finds the props are blown out.
examine	:	He does not examine the top.
goes into	:	He goes into the face.
falls	:	The top falls on him.
injured	:	He is injured.

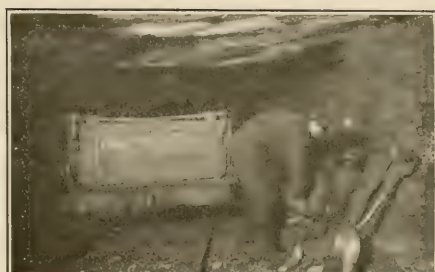
What is the miner in the picture doing? Where does he go? What happens to the props? Did he examine the top? Is this a careful miner?

DON'T FAIL TO EXAMINE THE TOP AFTER EVERY SHOT





**Bad Roof Under Which a Car of Clean Coal  
Is Lying**



**Laborer Loading the Coal**



**Laborer Covered by Fall of Roof**

## **WORKING UNDER BAD ROCK**

Here is a car of clean coal.

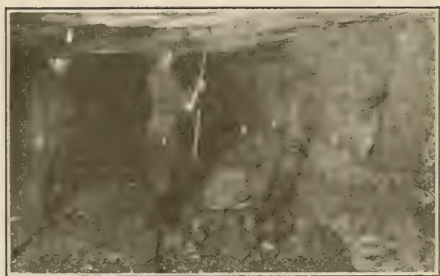
- |                |   |  |
|----------------|---|--|
| is trying      | : | The miner is trying the rock above the coal.       |
|                |   | The rock is not good.                              |
| does not want  | : | The miner does not want to dirty the coal.         |
| does not pull: | : | He does not pull down the bad rock nor set a prop. |
| is not safe    | : | The chamber is not safe.                           |
| is not careful | : | The miner is not careful.                          |
| comes          | : | The car comes into the chamber.                    |
| begins to load | : | The laborer begins to load the clean coal.         |
| falls          | : | The bad rock falls on him.                         |
| is hurt        | : | The laborer is badly hurt.                         |

Is there clean coal beside the road? What is the miner doing? Is the rock above the coal good. Why does the miner not pull down the bad rock? Is this a careful miner? Is this chamber safe? What is the laborer doing? What happens to the laborer?

**DON'T FAIL TO MAKE THE ROOF SAFE**



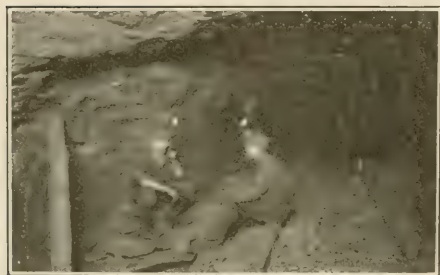




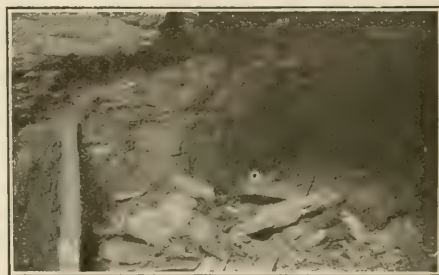
Fire-Boss and Miner Testing Roof



Fire-Boss Tells Miner to Stand Prop Under Roof



Miner and Laborer Smoke Before Obeying Order



Miner and Laborer Under Fall of Roof

### MINER NEGLECTING ORDERS

- |             |   |   |
|-------------|---|---|
| are         | : | Here are the fire-boss and the miner.                                   |
| hangs over  | : | This rock hangs over the road.  |
| are testing | : | The miner and the fire-boss are testing it.                             |
| is safe     | : | The rock is not safe.   |
| orders      | : | The fire-boss orders the miner to put that prop under the rock.         |
| goes away   | : | The fire-boss goes away.  |
| sit down    | : | The miner and the laborer sit down to smoke before they stand the prop. |
| falls       | : | The loose rock falls on them.   |

What does the fire-boss tell the miner to do? Does the miner obey the fire-boss at once? What are the miner and laborer doing? What happened to them while they smoked? Should the fire-boss wait till the prop is placed?

MINER, DON'T DELAY MAKING YOUR PLACE SAFE





Driver Sliding Foot on Rail



Foot Entering Frog



Driver's Foot Under Car

### DRIVER SLIDING FOOT ON RAIL

is coming	: The driver is coming with a car of coal.
is sitting	: The driver is sitting on the bumper.
is sliding	: He is sliding his foot on the rail.
comes	: The car comes to a branch.
is	: There is a frog at every branch.
is caught	: The driver's foot is caught in the frog.
shouts	: The driver shouts, "Whoa!" at the mule.
does stop	: The mule does not stop.
is held	: The driver's foot is held fast.
is pulled	: He is pulled from the bumper to the ground.
runs over	: The car runs over his leg.
is broken	: The driver's leg is broken.
not safe	: It is not safe for the driver to slide his foot on the rail.

How is the driver riding on the car? Is he sliding his foot on the rail? What happens when he comes to the frog? Does the mule stop? Does the car run over his leg? Is his leg broken? Is it safe for the driver to slide his foot on the rail?

### DON'T SLIDE YOUR FOOT ON THE RAIL







Motorman Goes Down Grade Without Examining Brakes and Sand



Motor Derailed at Foot of Grade

## MOTOR STARTING DOWN GRADE WITHOUT SAND

	: There is a sand box on the motor.
is put	: Sand is put on the track where it is steep.
do slip	: When sand is on the track the wheels do not slip.
can stop	: If there is plenty of sand the motorman can stop the motor. Sometimes there is no sand in the box.
is taking	: The motorman is taking out a trip of loaded cars.
comes	: He comes to the top of a grade.
is steep	: The track is very steep.
does stop	: The motorman does not stop the trip.
get off	: The helper does not get off to examine the brakes. There is no sand in the box.
starts	: The trip starts down the grade.
cannot stop	: The motorman cannot stop it.
slip	: The wheels slip on the rails.
goes fast	: The trip goes too fast.
jumps	: The motor jumps from the track.
are thrown	: The motorman and helper are thrown off.
are killed	: They are both killed.

MOTORMAN, BE SURE THE BRAKES AND SAND ARE ALL RIGHT

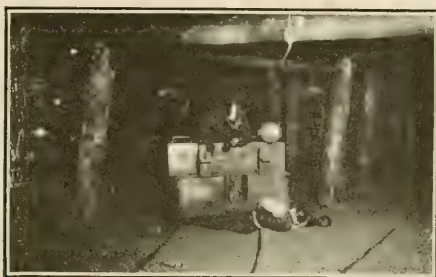




Motor Coming Through Doorway With Trip of Cars



Doorboy Jumping on Motor While in Motion



Doorboy Under Motor

### DOORBOY TRYING TO GET ON A MOTOR

is coming	:	The motor is coming along the roadway.
there is	:	There is a door on the gangway road.
stays	:	A doorboy stays by the door.
is closed	:	The door is closed.
sounds	:	The motorman sounds the alarm.
opens	:	The doorboy opens the door.
moves along	:	The motor moves along slowly.
jumps off	:	The helper jumps off to one side.
directs	:	The helper directs the doorboy to a safe place.
does not go	:	The boy does not go there.
gets on	:	The helper gets on the motor.
moves	:	The motor moves more rapidly.
tries	:	The doorboy tries to get on the moving motor.
falls	:	The boy falls under the motor.
runs over	:	The motor runs over the boy.
is killed	:	He is killed.

What is on the gangway road here? Who stays by the door? What does the boy do when a trip comes along? What is the helper doing here? Does the boy go to a safe place? What does the boy try to do? Does the boy get on the motor? What happens to him?

### DOORBOY, NEVER TRY TO GET ON THE MOTOR













Forcing Cartridge Into Hole With Drill



Cartridge Exploded and Miner Injured

## FORCING CARTRIDGE INTO A SMALL HOLE

is small	:	The miner's drill is too small at the sharp end.
will make	:	This drill will not make a hole large enough for the cartridge.
drilled	:	The miner drilled a hole with this drill.
tries	:	The miner tries to put a cartridge into the hole.
does go	:	The cartridge does not go into the hole easily.
cannot push	:	The miner cannot push the cartridge into the hole with his hands.
gets	:	He gets the drill.
tries	:	He tries to force the cartridge into the hole with the drill.
strikes	:	The drill strikes a spark.
flies	:	The spark flies into the powder.
sets off	:	This spark sets off the powder.
is near	:	The miner is very near the hole.
goes off	:	The powder goes off in the miner's face.
thrown back	:	The miner is thrown back against the gob.
are burned	:	His hands and face are badly burned.

What is the matter with this miner's drill? Does the drill make a hole large enough for the cartridge? How does the miner try to force the cartridge? Does the drill strike a spark? What does the spark do to the powder? Is it safe to force the powder with a drill?

## DON'T FORCE THE CARTRIDGE INTO THE HOLE



Miner Preparing Cartridge With Lamp on Head



Powder Exploded



Preparing Cartridge With Lamp at a Safe Distance

## PREPARING A CARTRIDGE

(Wrong Way and Right Way)

has come	: The miner has come to the box to get his powder.
has	: He has his lamp on his cap.
takes out	: He takes the cartridge out of the can.
prepares	: The miner prepares the cartridge with the lighted lamp above it.
drops	: A spark drops from the light into the powder.
sets off	: The spark sets off the powder.
goes off	: The cartridge goes off in the miner's hands.
is killed	: He is killed.
prepares	: In the last picture the miner prepares the cartridge in the safe way.
came back	: Here the miner came back to the box.
took	: He took the lamp off his cap.
put away	: He put the lamp five feet away.
prepares	: Now the miner prepares the cartridge.
can fall	: No sparks can fall into the powder now.
is safe	: The miner is safe here.

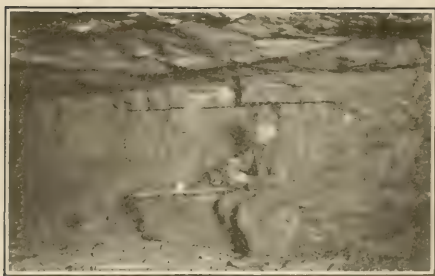
Where is the lamp in the first picture? Can a spark fall into the cartridge? What happens while the miner prepares the cartridge? In the last picture where is the lamp? How far must the lamp be from the powder? Is this miner safe?

ALWAYS KEEP THE LAMP FIVE FEET FROM THE POWDER









Putting Cotton in Lamp, Using Old Cotton for Light



Powder in Box Exploding, Miner Injured



Miner Putting in New Cotton at a Safe Distance from Box

## PUTTING IN A NEW COTTON

(Wrong Way and Right Way)

keeps	:	The miner keeps his cotton and powder in the box.
comes	:	He comes to the box for a new cotton.
takes out	:	He takes the old cotton out of the lamp and lays it on the box.
is putting	:	He is now putting a new cotton into the lamp.
is burning	:	The old cotton is still burning.
falls	:	A spark falls from the old cotton into the box.
sets off	:	The spark sets off the powder in the box.
is blown	:	The box is blown to pieces and the miner is killed.
is putting	:	In the last picture the miner is putting in new cotton in the right way.
has	:	This miner has two lamps.
lights	:	He lights one lamp and puts it on the ground five feet from the box.
puts	:	Now he puts a new cotton in the other lamp.
can get:	:	No sparks can get into the box now and the miner is safe.

What is this miner doing? Where does the first miner put his old cotton? What is in the box? What happens?

How does the second miner make light for himself? Where does he set the lamp?

ALWAYS KEEP YOUR LIGHT AWAY FROM THE BOX



Miner with Drill on Shoulder Walking Under Trolley Wire



Drill Struck Wire. Miner Thrown to Ground



Carrying Drill in Hand by Side

### MINER CARRYING A DRILL ON HIS SHOULDER

is walking	: This miner is walking along the road.
there is	: There is a trolley wire over the road.
is carrying	: The miner is carrying a drill on his shoulder.
walks under	: The miner walks under the trolley wire with his drill.
strikes	: His drill strikes the trolley wire.
passes	: The electricity passes through the drill to the man.
is shocked	: The man is shocked.
is knocked	: He is knocked to the ground.
hurts	: The shock hurts the man.
is walking	: In picture three the miner is walking under the trolley wire.
is carrying	: He is carrying his drill in his hand by his side.
can touch	: The drill cannot touch the wire now.
passes under	: The miner passes under the wire safely.
does receive	: He does not receive a shock.

How is the miner carrying the drill in the first picture? What happens in the first picture? What happens when the drill strikes the wire?

How does the miner carry the drill in the third picture? Is this man hurt? Which is the best way to carry the drill?

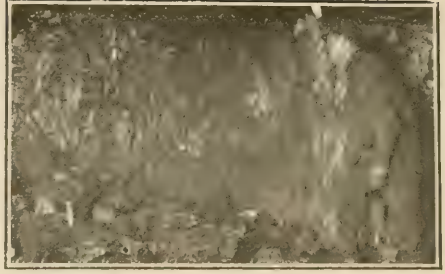
**DON'T CARRY A DRILL ON YOUR SHOULDER**







Miner Going from Box to Face with Safety and Naked Lamps



Miner at Face with Naked Lamp on his Head



Explosion of Gas at Face



Injured Miner Receiving First Aid Treatment

### NAKED LAMP IN A GASSY CHAMBER

- |            |   |   |
|------------|---|---|
| goes       | : | The miner goes from the box to the face.  |
| carries    | : | He carries the safety lamp in his hand and the naked light is still on his cap. |
| begins     | : | Gas always begins to collect near the roof.                                     |
| hold       | : | It is dangerous to hold an open light near the roof.                            |
| is useless | : | The safety lamp is useless if you keep a naked light burning near the roof.     |
| arrives    | : | The miner arrives at the face.  |
| burning    | : | The naked light is still burning near the roof.                                 |
| does test  | : | The miner does not test for gas with the safety lamp.                           |
| burns      | : | The safety lamp burns with a long blue flame when in gas.                       |
| there is   | : | There is gas near the roof in this chamber.                                     |
| sets off   | : | The open light sets off the gas.  |
| there is   | : | There is an explosion.  |
| is burned  | : | The miner is badly burned.  |
|            |   | The "first aid" men carry the miner to the shanty.                              |
| put        | : | They put oil and bandages on his burns.   |
| is taken   | : | He is then taken to the hospital.   |

DON'T CARRY AN OPEN LIGHT WHERE THERE IS GAS



The facts shown in the picture should be brought to the attention of the pupil by such questions as—

What do you see in this picture?

What is the miner doing?

With what is the miner drilling the hole, etc.?

In every case require that the pupil give a full and complete sentence in reply and not merely a single word.

Lead him to say—

I see a miner in this picture.

The miner is drilling a hole.

He is drilling a hole with a drill, etc.

The teacher should also make extensive use of the questions at the end of each lesson, for in this way, he can best determine how fully the content of the lesson has been grasped by the pupil. After the lesson has been completely mastered in conversation the reading of the lesson should begin. But little difficulty will be experienced in reading after the conversation has been mastered. Then after the pupil learns to read the lesson he is ready to begin the writing of the lesson. Much of the written work can be practiced at home by the pupil.

If the above course of procedure is carefully and faithfully followed, the pupil will soon learn enough idiomatic English to help him greatly in his work and be of every day practical use."

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## ELECTRIC LAMPS FOR COAL MINES

The question of the use of electric lamps in the coal mines is one of great importance and in recent years has been receiving a great deal of attention. Several of the large companies in the anthracite and bituminous regions have been experimenting with various lamps and reporting the results to the Department of Mines. It is evident from these reports that the electric lamp will, before very long, be so improved and perfected as to be of great service in the mines. The experiments show that, even in its crude form, it was superior to the open-flame lamp, and improvements in its construction are constantly being made.

The Philadelphia and Reading Coal and Iron Company began experiments in 1908. The available data at that time showed no record of electric lamps in general use anywhere underground. It was, therefore, necessary to devise and develop an outfit that would meet the situation in a practical way.

The problem was first attacked by a thorough investigation to determine the type of equipment that would best serve the workman. This disclosed the fact that the most practical outfit would be an electric lamp designed to replace the oil lamp on the cap, thus leaving the hands free. It was also found that a small storage battery could be made of no greater weight than the oil cadger and that it could be carried on the belt. It was, therefore, decided to work out an equipment using a small incandescent lamp in a reflector and connect it by means of a twin cord to a battery supported on the waist belt.

The first requirement was a battery of sufficient capacity to supply light for at least twelve hours, and be light in weight and convenient in size for the belt support. It was found that a cell having a normal voltage of 2 volts and capable of a normal discharge of .5 amperes for 10 hours, or a 5-ampere hour cell would weigh about  $2\frac{1}{4}$  pounds, this weight being approximately equal to the oil cadger.

To obtain the greatest output of light from the small lamp obliged to be used, a number of experiments were made to determine how far the brilliancy of the filament could be carried and sustained without sacrificing the life of the lamp and destroying its commercial value. These experiments were not as satisfactory as expected, as the manufacturing process on low voltage lamps is rather difficult. Great variations were found in efficiency, brilliancy, and life of the lamps even when they were made with great care under the same process. The lamp that has given the greatest satisfaction had an efficiency of about 1.25-W. P. C. and guaranteed for 300 hours burning.

To further increase the light efficiency and to increase the light distribution by concentrating its rays within a limited area, a number of designs of different shaped reflectors were tested for efficiency in distribution. As the tests showed very little variations in the shapes, the plain parabolic reflector was decided upon to form the lamp housing, the bulb being protected by a heavy glass front held in position by an expanding spring.

The first battery experiments were conducted with various cells of the alkaline storage battery and the pasted lead storage battery, the hard rubber jars encased in coffee cans as cases, the electrolyte being in liquid form with no means for the prevention of spilling other than the vent plug.

It was soon demonstrated, however, that while the cell could be used in a vertical position with good results, it was impossible to prevent the acid from creeping out around the cell connections and vent plug when used in stooping positions or in running, thus destroying clothing and attacking the body of the men. This experiment proved impractical.

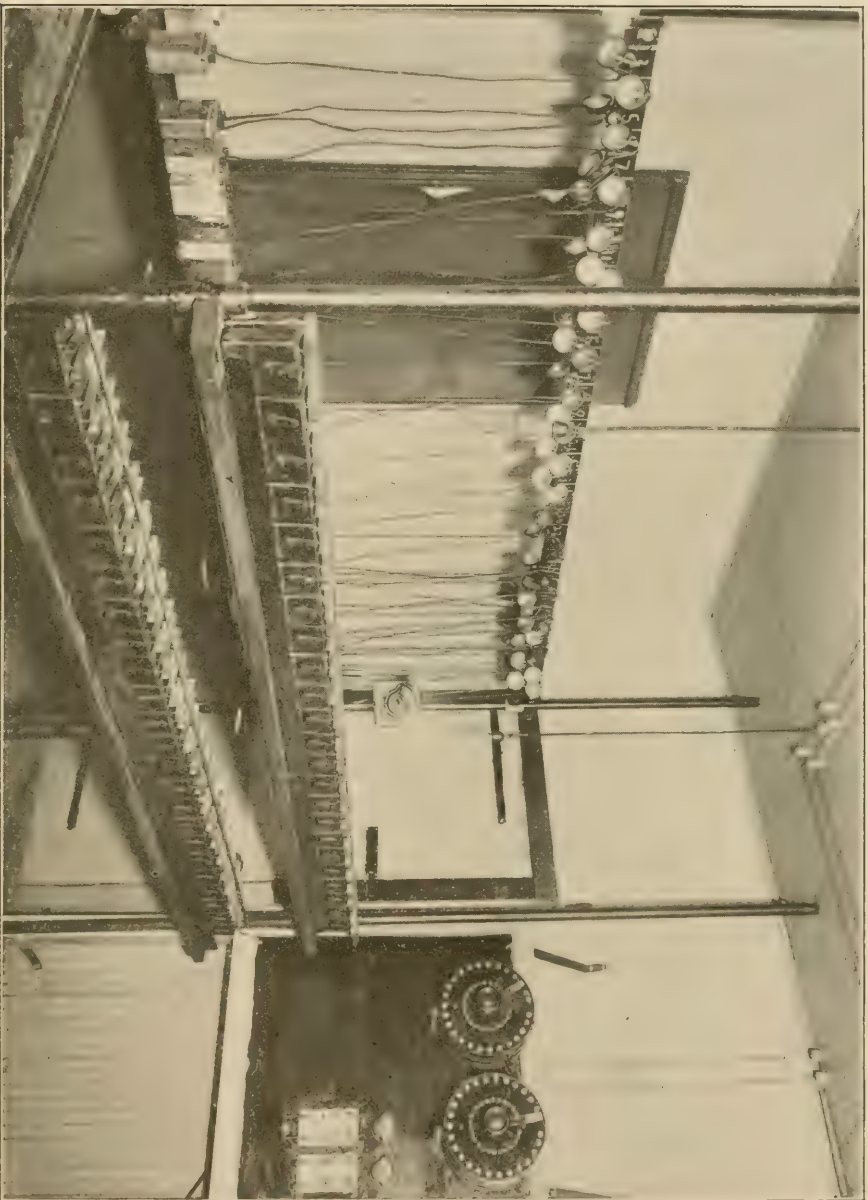
Subsequent experiments were made to determine some method of solidifying the electrolyte to prevent it from spilling and creeping.

It was found by chemical analysis that the proper parts of sodium silicate and sulphuric acid formed a jelly electrolyte. Some difficulty was experienced in getting the proper mixture that would congeal in the allotted time and not cause too much internal resistance, and decrease the cell capacity.

Experiments were also made in wrapping glass wool around the elements to hold the greater part of the electrolyte in suspension, also serving to hold all active material in place and prevent the possibility of internal short circuits.

The results obtained from these experiments were so encouraging that orders were placed by the Philadelphia and Reading Coal and Iron Company for a number of batteries with the sodium silicate mixture and a number wrapped with glass wool.

Numerous defects appeared in the battery from time to time, such as the active material falling out, defective insulation between the elements, short circuits, rubber jars breaking, casings being attacked by the electrolyte, etc.

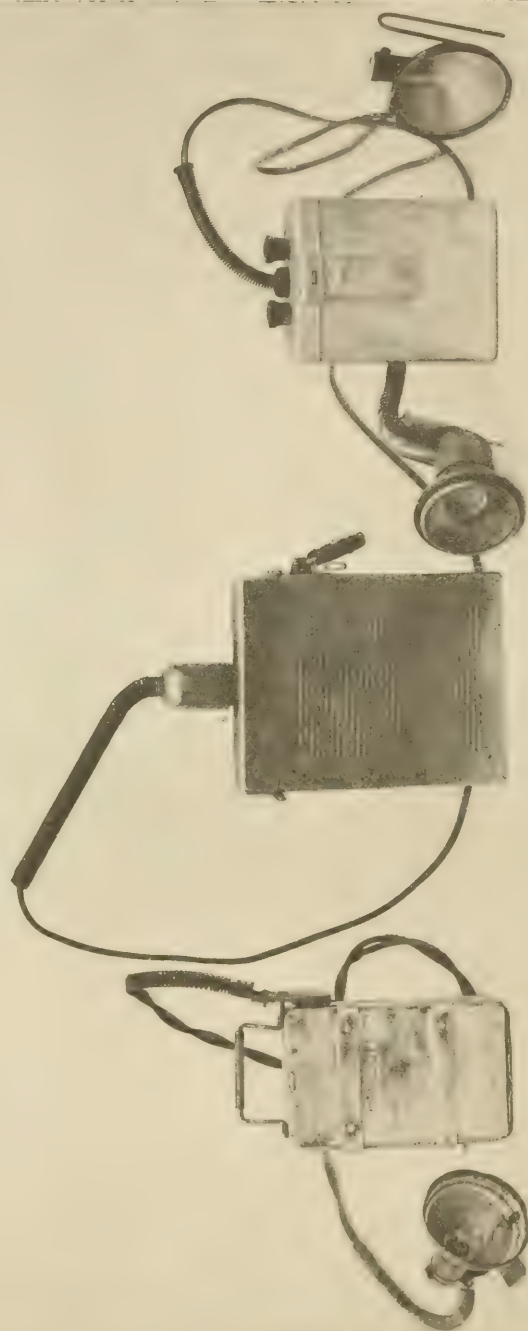


Philadelphia and Reading Coal and Iron Company Electric Miner's Lamp Charging Station at Indiana Ridge Colliery









Hirsch Electric Lamp

Edison Electric Lamp

Witherbee Electric Lamp

All defects were promptly remedied and improved, such as increasing thickness of jars, insulating separators, and substituting aluminum for tin in the casings, which finally produced a fairly reliable storage battery.

To secure a satisfactory twin cord to conduct the current from the battery to the cap lamp proved to be more difficult than was expected.

Cord troubles appeared as soon as the equipment was put into use, sometimes making it rather difficult to determine whether the battery or cord was in trouble, as a defective cord invariably reacted on the battery. The cord would break either at the lamp or battery connections, or short circuit within itself. A thorough investigation of these troubles proved that the average workman made from 800 to 1,000 movements of the cord during the day's work, which meant the same number of bends in the cord per day. It was also found that the insulating qualities of the cord became impaired from being saturated with perspiration and water. These cord troubles were overcome by a series of experiments in varying the size and make up of conductors and the insulating qualities. The flexibility of the conductors was increased fifty times and the use of special applications of high grade rubber produced a cord circuit which has stood the service well and proved economical.

Various schemes for switching on and off the light and interchanging cap lamp for hand lantern have been tried out with partial success.

Owing to the low voltage of the circuit and complication of contacts necessary to accomplish reliable results, it was deemed best to eliminate all contacts, thus reducing all resistance possible from poor contacts. None of the equipments have any intermediate contacts between the battery terminals and the lamp.

The success of the lamps also depended upon the recharging of the batteries each day.

The photograph attached illustrates a charging station.

The apparatus for charging consists of a series of racks built in steps on which the batteries are supported and to which brass clips are secured and arranged so that the batteries when put into place close the circuit through the battery. When the battery is taken away the supply circuit is closed through the remaining cells, the batteries always being placed in the circuit in a manner to prevent reversals in charging.

An ammeter indicates the proper charging current, a volt-meter the conditions of charge, and a rheostat or bank of lamps controls the rate of charge.

The best results are obtained by charging at the rate of one ampere for about eight hours, the charging generally being done during the night.

Direct current is required for charging the batteries, and is generally taken from the trolley line circuit where haulages are installed, or by the use of a mercury rectifier or motor generator set where alternating current is used.

During the experiments, which have covered a period of five years, exhaustive tests were conducted on twelve types of battery equipments, all of which were submitted in such crude form that it was necessary to make radical changes in construction and design, making them of the most robust nature to stand the severe service of mining.

Those which possessed inherent defects in design, thus rendering them unfit for continuous service, were gradually abandoned, leaving three types which have been modified and brought into line to meet the requirements of the users and fulfil the purpose for which they were intended.

The three outfits which survived the test and are now in daily use are:

The "Hirsch" Lamp, made by the Hirsch Electric Mine Lamp Company, the "Wico" Lamp, made by the Witherbee Igniter Company, the "Edison" Lamp, made by the Edison Storage Battery Company.

The "Hirsch" battery is of the lead sulphuric acid type, the elements being mounted horizontally in a hard rubber container in which the electrolyte is retained in gelatinous form to overcome the leakage.

The "Wico" battery is also of the lead sulphuric acid type, the elements being mounted vertically in a hard rubber container and equipped with patented vent tubes which by their position and shape prevent leakage.

The "Edison" battery consists of nickel hydroxide and iron oxide in a potash solution in a steel container hermetically sealed, with a miniature outlet containing a patented tube which prevents leakage.

The "Hirsch" and "Wico" batteries are mechanically protected by a drawn aluminum case and the "Edison" by a nickered steel case.

The twin conductor cord conveying the current from the battery to the lamp is arranged with permanent terminal connections to prevent the possibility of its being disconnected, the conductor being encased by flexible steel armor to serve as an anchor and to prevent sharp bending. The same cord arrangement is used on all outfits.

The cap lamp consists of a parabolic reflector in which is mounted a tungsten lamp. The reflector is provided with an outer flange supporting a thick glass lens cushioned on gaskets and held in place by a cap or spring, and provided with a hook to fit into the miner's regulation cap.

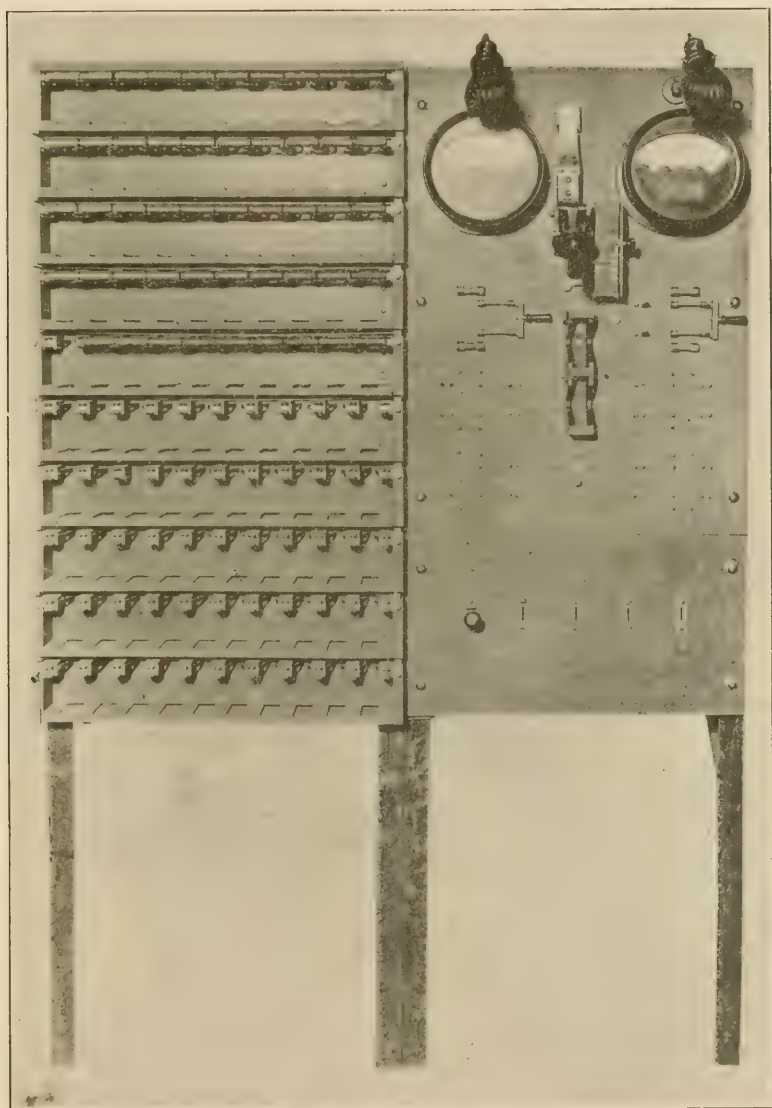
The manner in which the miner wears the outfit is shown on photograph herewith. The battery weighs about  $2\frac{1}{2}$  pounds, is supported at the waist by a belt, which leaves the arms free, the flexible cord leading upward through a guide in the back of the cap to the lamp attached to the cap leather support on the front.

It does not interfere with free motion of the body in any direction and its weight is not felt. A man can put himself in any position without restraint. He can use all tools and perform any work desired with as much freedom as when wearing the oil cap lamp.

At the present time the Philadelphia and Reading Coal and Iron Company has 1,500 lamps in day and night use, with satisfactory results. They seem to be dependable and no serious complaints have been made concerning them.

Another lamp that possesses merit, but has not been so thoroughly tested, is the R. and B. lamp, manufactured by the R. and B. Lamp Company, Charleroi, Pa.

The lamp is a portable one and compact enough to be carried on the head, the same as the ordinary naked light. This lamp is different from any other electrical lamp now on the market, for use in the mines, as it has none of the so-called trouble of wires becoming short-circuited or even open-circuited, and cannot become defective through perspiration or any other causes.



R. and B. Charging Station









Crag Portable Electric Lamp Complete



Miners Equipped with Edison Electric Lamp







R. and B. Electric Cap Lamp

The lamp is placed on a charging-board after the miner leaves the pit, when his work is done. It is then re-charged, and on returning to work the miner places the lamp on his cap just the same as the ordinary oil lamp.

When in operation the connections or contact are sealed and are locked by a special locking device which can only be opened by a special electro-magnet provided for same at place of charging station.

The composition in the batteries is of such a consistency that it cannot spill no matter what position the lamp may be placed in. The electrolyte assumes a solidified formation during the discharge, and a liquid formation during the charging, thus completely doing away with the spilling of acid.

The re-charging rack is automatic in every detail. The charging station attendant is able to place batteries in the rack without changing its normal condition. The circuits of the re-charging rack are so arranged that one or one thousand batteries may be charged at the same time.

The charging-board has a device for timing the charge, regulating the polarity, as well as a circuit breaker which controls over-loading and under-loading as well as reverse current.

The charging-board is equipped with ammeters so that the attendant may see at a glance that the charging current is equal.

The batteries are made of vulcanized hard rubber, which is thoroughly tested to stand everything required by the R. and B. Lamp Company.

The case is made of aluminum, with a device on the cap to meet the requirements of the lamp, so as to be carried as easily as any other ordinary cap lamp. It is provided with a reflector which increases the volume of light 25 per cent. over the ordinary safety lamp.

On account of the construction of the globe, the miner can readily see the roof, sides and floor of the pit without turning to any angle for a distance of 40 feet. The lamp is so constructed with low voltage and amperage, which should be 7-10 of 1 ampere, that it would be impossible through any accident for the glow on the filament in gas or breakage to ignite gas in any gaseous mines.

It has been pronounced by leading mining men as one of the most efficient and most compact electric safety lamps yet invented.

Photographs of the lamp and a charging station are given herewith.

The Ceag portable electric mine lamp, manufactured by the Manesmann Light Company of America, New York, N. Y., is intended for use as a hand lamp in gaseous mines. It is used in the flat veins of coal in Fayette and Westmoreland counties where the Wolfe safety lamp is also used. The H. C. Frick Coke Company has found the lamp satisfactory.

The lamp weighs five pounds. A photograph is given herewith.

It is well known how hard it is to introduce any new device with which people are not familiar, and yet no trouble was experienced in demonstrating the advantages and adaptability of the electric lamp, and now the warmest advocates of the lamps are the men who use them.

The electric lamp is not intended to replace safety lamps, as it will not detect the presence of gas, but it is suitable for use by all classes of mine employes, especially in places where unforeseen



gas feeders appear; in dry and dusty places; where considerable timber is used; by repairmen timbering on slopes and in headings.

It is also valuable when used in conjunction with safety lamps in testing gaseous working places, as with its greater light it permits of a more thorough and extensive inspection of the roof conditions.

It is expected that the electric lamp will be brought to a higher degree of development and that the difficulties now met with in its use will be perfected as the requirements are better understood.

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## MINE TIMBERING

Of the many problems that confront the mine management the most serious is the timbering of the mines. With every passing year this problem becomes greater and more difficult to solve. Not many years ago the initial cost of opening an anthracite colliery was deemed a serious obstacle to the undertaking; the great cost of keeping the mines free from water was another annoying and expensive feature, but the timber problem now overshadows all others.

This is a phase of the mining business that the general public knows little about, and yet the timbered gangways and drifts cover a vast extent. In the anthracite region the Philadelphia and Reading Coal and Iron Company has more than 800 miles of gangways, and there is a total of 2,000 miles of these underground ways in the Schuylkill region.

Owing to the large amount of timber used and its growing scarcity, a great deal of attention has been given in recent years to methods for its preservation. It has been demonstrated that by proper preliminary treatment the life of the timber can be greatly increased. It is also claimed that the use of a preservative will permit of a cheaper grade of timber being used. Some of the large operators have established working plants for the preservation of the timber used inside the mines. While the lengthening of the life of the timber and the ability to use cheaper grades reduce the cost somewhat, the demand is nevertheless so great that at times it is difficult to obtain an adequate supply.

Most of the timber now used in the anthracite mines is yellow pine from the south, and one of the large anthracite companies, owing to the great demand and the impossibility of getting timber in the north, has been sending its own cars south to expedite shipments.

Herewith is given a brief account of the preservative tests made by the Philadelphia and Reading Coal and Iron Company.

Early in 1906, the Philadelphia and Reading Coal and Iron Company commenced a series of investigations to determine the economy and practicability of preserving Mine Timber from decay.

The tests were undertaken because of the increased cost, and decrease in the supply, of timber suitable for mining purposes. It was desired to determine the most effective and economical methods of preserving the timber for service in the mines to increase its durability and period of usefulness.

Tests have been made along the following lines:

- (a) To determine the most favorable season of the year for cutting the timber.
- (b) To learn the possible advantages of peeling timber, before putting it into use.
- (c) To ascertain to what extent the life of mine timber could be prolonged by treating it with chemical preservatives, in the form of oils and solutions of various salts.

In the course of this work special attention was given to mine timber and props, as well as to the lumber used in the mines.

These tests were conducted on a scale large enough to be of practical value in furnishing conclusive results.

Timber treated with the various preservatives was placed in all parts of the mines, especially where the conditions for decay were most prevalent.

As the work was experimental, a small upright cylinder was erected at Silver Creek Colliery, where from three to four props were treated each day. Well seasoned Loblolly pine was given very efficient treatment with Creosote Oil and Zinc Chloride solution in four to five hours' time, but little or no penetration could be secured by the Zinc Chloride solution with green timber. A penetration from one to two inches was obtained by boiling green timber four to five hours in Creosote Oil heated to 240° F. and then allowing it to cool for a period of six to eight hours.

Seasoned timber was also treated with common salt, and salt with Magnesium Chloride. A thorough penetration was secured by boiling the timber four to six hours and allowing it to cool from ten to twelve hours.

For about two years, timber treated by this method, as well as timber that was brush treated with Creosote and Carbolineum, was placed in various parts of the mine and a record kept of each set, showing the kind and method of treatment, the time it was placed and its location in various gangways.

After two years of work along this experimental line, the efficiency of the various treatments was determined to such an extent that it was thought advisable to increase the supply of treated timber, and accordingly a non-pressure plant with a cylinder six feet in diameter and thirty-two feet long was installed.

In the latter part of 1908, the new plant was placed in operation and twenty-four sets (26 cubic feet to a set) of gangway timber have since been treated daily. Shortly thereafter there were several thousand sets of treated timber in the mines, and also an equal number of untreated sets for comparison.

The results show that brush treatments are effective and economical when the amount of timber to be treated will not warrant the erection of an open tank or pressure plant.

All tank treated timber that was sufficiently seasoned to insure a penetration of from one and one-half to three inches, is in an excellent state of preservation, and it is impossible at this time to determine which of the preservatives used in the tank treatment show the greatest efficiency.

In addition to the timber treated at Silver Creek Colliery, several consignments of Creosote and Zinc Chloride pressure treated timber

were purchased from a wood preserving company in Texas, and placed in the mines in 1906. These timbers are now after seven years in a perfect state of preservation.

Timber treated with Creosote and Zinc Chloride have thus far shown an average increased life of about 300 per cent., while the cost of such treatments adds about 20 and 12 per cent. to the cost respectively.

Peeled timber in some locations has shown a slight advantage over unpeeled timber; more especially timber cut in the winter months.

Timber cut in the spring and summer is not so durable as that cut in winter, when the life processes of trees are less active.

The natural durability of the timber depends not only upon the greater or less density, but also upon the pressure of certain chemical constituents in the wood. During the growing season or summer months, wood contains more sulphuric acid and potassium than in the winter season. The presence of these two chemical substances during this period constitutes the chief factor in dissolving the natural preservatives within the wood, thus making it more susceptible to the attacks of wood destroying fungi.

Timber cut during the winter may be seasoned for several months without deteriorating, but summer cut timber, more especially Loblolly pine which is practically all sapwood and contains only a small amount of gum and resin, will become sap-stained within six to eight weeks. Sap-staining or the fermentation of the sugars and starch in the sapwood is in reality the first stage of decay, and mine timber, when once sap-stained, soon loses its strength, as the decomposition that follows causes the timber to lose its fibrous nature and consequently its life in the mines is greatly reduced.

The lack of supply of the more dense and better grades of timber makes it necessary to use some of the faster growing or inferior species. Therefore, greater attention must be given to the time of cutting timber to obtain its greatest maximum life.

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## THE ANTHRACITE COAL TRUST DECISION

The most notable event in the history of the anthracite coal trade for the year was the great legal battle fought between the Government and the Anthracite Coal Trust.

The petition filed with the United States Circuit Court asked that the railroads and coal companies controlling the mining and transportation of anthracite be declared illegal and be dissolved. The defendant corporations were the Reading Company, a holding corporation, the Reading Railway Company, the Lehigh Valley, the Jersey Central, the Delaware, Lackawanna and Western, the Erie, and the New York, Susquehanna and Western.

This case is looked upon as the most important the Government has undertaken next to the Standard Oil case. In brief the petition recites that the defendant railways control all the means of transportation between the anthracite mines and tide water, except the lines of the Pennsylvania and the New York, Ontario and Western Railways, which reach only a limited number of collieries; that they



transport annually about 78 per centum of the total anthracite tonnage; that in their own name or through coal companies whose capital stock they own, they control about 90 per centum of all the anthracite deposits and produce about 75 per centum of the annual supply; that independent operators, although owning probably little more than five per centum of the anthracite deposits, produce about 20 per centum of the annual supply that would be sold in competition with the output of the defendants were it not for the restraints imposed by the latter.

The petition then charges that the defendants have conspired to silence competition among themselves in the transportation and sale of coal and to prevent the sale of the independent output in competition with their own, thereby establishing a monopoly, and in support of this general allegation it specifies:

A. That the defendant railroads agreed among themselves upon a uniform contract to be entered into by them or their coal companies with the independent operators along their respective lines under which the railroads would be able to control the sale of the independent output, and that by virtue of their control of all the means of transportation from the anthracite mines to tidewater, save the lines of the Pennsylvania Railway Company and the New York, Ontario and Western Railway Company, the defendant railroads were able to force, and practically did force, the independent operators along their lines into making these contracts.

B. That the Erie Railway Company has exchanged shares of its own capital stock for a majority of the shares of the New York, Susquehanna and Western Railway Company, a competing line, thereby uniting under a common source of control the two competing railway companies and their subsidiary coal companies.

C. That the Reading Company, which already held all the shares of the Philadelphia and Reading Railway Company, has exchanged its own shares and bonds for a majority of the shares of the Central Railway Company of New Jersey, a competing line, thereby uniting under a common source of control the two competing railroads and their subsidiary coal companies, which together transport about 35 per cent. of the annual anthracite tonnage and control about 60 per cent. of the anthracite deposits.

D. That twice in recent years the defendants have defeated the construction of projected independent railroads from the mines to tidewater, which would not only have introduced competition into the transportation of anthracite coal, but would have permitted the output of the independent operators to be sold in the markets in competition with that of the defendants.

The petition prays generally that the defendants be enjoined from further carrying out their combination, and specifically that the above-described contracts be canceled, and that the mergers between the Erie Railway Company and the New York, Susquehanna and Western Railway Company and their coal companies, and between the Philadelphia and Reading Railway Company and the Central Railway Company, of New Jersey, and their coal companies, be dissolved.

The decision of the Supreme Court of the United States in this case, as rendered unanimously by the six sitting justices, was that the existence of the so-called Anthracite Coal Trust, alleged to be composed of six anthracite coal carrying railroads and their subsid-

iaries, had not been proved by the Government. The Court found, however, that the majority of stock of the Temple Iron Company was purchased by the existing railroad interests for the purpose of preventing the construction of the new road into the anthracite country, and the dissolution of the interests controlling the company was ordered. At the same time the contracts whereby the so-called independent coal companies were bound to deliver their total output at 65 per centum of the average tidewater price were held to be abnormal and in restraint of trade, and the lower court was ordered to terminate them.

The result of the decision, in the opinion of the Attorney General of the United States, will be to so completely destroy the combination that now controls the prices of anthracite that it must result in a distinct measure of relief to the public.

The opinion of the railroad officials seems to be that the decision will have very little effect on the affairs of the companies concerned.

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### SHORT MOUNTAIN COLLIERY

One of the most famous collieries in the anthracite region is the Short Mountain Colliery in the upper end of Dauphin County. For more than 83 years this colliery has been in continuous operation and is now undergoing improvements of the most extensive and costly character that will increase the productive facilities and prolong the life of the colliery for probably 35 years.

This important work has been under the supervision of Robert A. Quin, Manager, General-Superintendent William Auman and Engineer Charles Kutzner, and they have embodied several new ideas in the construction of the breaker erected by which it is believed much of the coal now wasted can be utilized. This great work of improvement has been accomplished without the loss of a single life or injury to any of the workmen.

Briefly the history of Short Mountain Colliery is as follows:

Early in the nineteenth century anthracite coal was discovered in the mountain, known as Short Mountain, lying north of and adjacent to the town of Lykens.

The mining of coal in small quantities to supply the needs of the people living in the vicinity was begun and has continued without interruption to the present time. The construction of a railroad in 1834 from Millersburg to Lykens afforded facilities for conveying the product to other markets and gave an impetus to the mining operations and the production of coal was greatly increased.

The coal was transported in small cars, hauled by mule teams over the wood track of the railroad to Millersburg, a distance of 16 miles, where it was loaded into canal boats and conveyed by canal to Baltimore and intermediate points.

In the year 1848 the railroad was re-constructed from Millersburg to Lykens to afford transportation of the coal by steam locomotive and railroad cars. In the same year the Lykens Valley breaker was erected, and in 1850 the Short Mountain breaker was erected for the purpose of preparing coal in various sizes.

In 1869 Short Mountain breaker was destroyed by fire, but was replaced the following year with a new structure. Eventually the Lykens Valley breaker was abandoned and razed and all the coal prepared for market in Short Mountain breaker.

In 1888 a new breaker was built, having a greater capacity and equipped with machinery to give the coal better preparation. This now is to give way to the new modern breaker constructed during the year 1912. This breaker is built on all concrete foundations and is a substantial structure with steel pockets. All new machinery is installed and so arranged as to give the coal the best possible preparation.

In 1912 the company began the sinking of a four compartment shaft, to be 1,650 feet in depth when completed, and the driving of tunnels on the several levels to meet the shaft.

This shaft will replace the use of four slopes, which are at present the principal openings and hoistways for bringing the coal to the surface.

The famous Lykens Valley seams, which produce the highest grade of anthracite coal, and which are confined to this immediate territory, are the only seams worked at Short Mountain Colliery. They have been mined for a period of about 83 years and will probably be productive for 35 years more before being exhausted.

The elevation of the upper workings is 1,200 feet above sea level and the lowest workings 900 feet below sea level.

Records of the quantity of coal mined prior to 1873 are not available. From the year 1873, inclusive, to January 1, 1913, there have been shipped to market from Short Mountain Colliery 9,615,053 tons. This does not include coal mined and used for generating steam at the Colliery, which amounted to approximately 65,000 tons a year.

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## PROPOSED ANTHRACITE MINE CODE

There being an urgent demand and a well recognized necessity for an amendment to the Anthracite Mine Laws of the Commonwealth, the Legislature of 1911 authorized the Governor to appoint a Commission to revise and codify the present anthracite laws.

The resolution called for a Commission of nine persons, three of whom were to be selected from the operators, managers and superintendents in the anthracite region, three from among the mine workers, one a Member of the Senate, one a Member of the House of Representatives, and one a person versed in the art of mining.

The Commission was authorized to hold its meetings in Wilkes-Barre, and was given the right to call into consultation any person, who, in its opinion, might be able to give information that would assist in the work of revision.

In accordance with the resolution, the Governor appointed a Commission as follows:—W. D. Owens, West Pittston; William R. Reinhardt, Shamokin, and W. G. Robertson, Scranton, representing the operators; H. C. Morgan, Scranton, Martin A. Nash, Glen Carbon, and Peter O'Donnell, Wilkes-Barre, representing the mine workers; Sterling R. Catlin, Wilkes-Barre, Senator; E. E. Jones, Harford,



Member of the House of Representatives, and James E. Roderick, Hazleton, Chief of the Department of Mines. The Governor designated Senator Catlin as Chairman.

The Code as finally prepared and presented to the Legislature by a majority of the Commission embodied every possible practical provision for the improvement of the conditions in the mines. The sole object of its framers was to incorporate provisions that would afford more thorough protection to the life and health of the employes and at the same time give just and adequate protection to the property of the operators.

For the information of all persons interested in mining legislation, the Code is printed herewith as amended in the Senate Committee. It is not in the form desired by the Chief of the Department of Mines, but it will, nevertheless, be of great assistance to any future Commission that may be appointed to revise the anthracite laws. Attention is specially called to the following articles.—

Article 3. Treating of the duties of the owners of coal mines, operators and superintendents. Section 3 of this Article makes the operator responsible for any neglect on the part of any of the mine officials.

Article 5. Providing for the examination of mine foremen, assistant mine foremen and fire bosses. This is a new article. Its provisions will guarantee more efficient officials of this class. The Article is almost identical with the one in the Bituminous Code.

Article 6. Treating of the duties of the mine foreman, and assistant mine foreman. The provisions of this Article, which follow closely the provisions of the Bituminous Code, make clearer and more imperative the duties devolving upon these officials.

Articles 7 and 8. Cover very thoroughly the duties of fire bosses and outside foremen.

Article 9. Provides a systematic and comprehensive examination for applicants for the office of mine inspector. This article would make it impossible for any person to pass the examination who is not thoroughly qualified.

Article 10. Covers the duties of Inspectors and makes it very clear that the chief duty of the inspector is to see that all the provisions are carried out.

Articles 11 and 12. Relating to the discretionary powers of the inspectors and to the neglect or malfeasance of inspectors.

Article 13. Relates to the inspection districts and to the authority of the Chief of the Department of Mines to arrange the districts and designate the selection of the various inspectors.

Article 14. Covers the very important question of ventilation.

Article 15. Relates to signalling apparatus, hoisting machinery, ropes and safety catches. It covers many points not covered by the present law.

Article 16. Relates to safety lamps and open lights. It is an entirely new article.

Article 17. Relates to shafts, slopes, openings and outlets and contains some new provisions for the safety of the employes.

Article 18. Relates to the sinking of shafts.

Article 19. Relates to openings for drainage.

Article 20. Relates to boundary pillars and makes it obligatory on the owners and operators to leave a sufficient pillar to withstand the pressure of water between properties. It is a new article.

Article 21. Relates to the use of electricity. This is a new article. It is very complete and strict in its requirements and its effect would, no doubt, lead to reducing the dangers from electricity.

Article 22. Provides for an inspection by or in behalf of employees. This is a new article and will give the employees an opportunity to make an inspection of any place in a mine when an accident occurs.

Article 23. Relates to the Miners' Examining Boards.

Article 24. Relates to the duties of the miner. This is practically a new article and contains important provisions regarding the use of explosives.

Article 25. Relates to emergency hospitals.

Article 26. Relates to rescue and first aid corps. It is a new article and its effect would be to bring all the companies to the same standard in this important work and to the use of the same methods to safeguard and rescue the employees.

Article 27. Relates to ambulances and stretchers.

Article 28. Regulates the use of explosives and detonators. It is a new article.

Article 29. Relates to black powder.

Article 30. Regulates the important matter of the use of illuminants. This is a new article.

Article 31. Contains a code of signals. This is a new article.

Article 32. Relates to boilers and connections.

Article 33. Relates to inside stables and buildings. This is a new article intended to prevent mine fires in buildings inside the mines.

Articles 34 and 35. Relate to wash-houses and the employment of females and minors.

Article 36. Contains the special rules. Defines the duties of the officials. It is a new article.

Article 37. Contains the general rules.

Article 38. Relates to inquests.

Article 39. Relates to the location of mines and the jurisdiction of the courts. This is a new article.

Article 40. Relates to records, forms and printed matter, used by the Inspectors. This is a new article.

Article 41. Prescribes penalties for violation of the mining law.

Article 42. Relates to the employer's liability. This is a new article.

The Code as presented passed second reading in the Senate and was then recommitted to the Committee on Mines and Mining where it remained. Had the Code been enacted into a law, it would undoubtedly have worked to the benefit of both the employees and operators and would have placed the great anthracite mining operations under most advanced and most comprehensive regulations. It would have kept Pennsylvania in the front rank of the progressive mining States.

### AN ACT

To provide for the Health and Safety of persons employed in and about the Anthracite Coal Mines in the Commonwealth of Pennsylvania, for the protection and preservation of property connected therewith, for investigations and inquests after accidents, defining the liability of employers and prescribing penalties for violations of this act.

## ARTICLE I

## Application of Act

Section 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met and it is hereby enacted by authority of the same, That the provisions of this act shall apply to every anthracite coal mine or colliery in this Commonwealth.

## ARTICLE II

## Definition of Terms

Section 1. For the purpose of this act the definitions of the terms contained herein shall be as follows:

Colliery. The term "colliery" means the inside workings of a mine or mines and the outside operations connected therewith.

Mine. The term "mine" means all under-ground workings and excavations, shafts, slopes, drifts, tunnels and all other openings penetrating a coal seam or seams, also all shafts, drifts, slopes, tunnels and other openings being sunk or driven, together with all roads, appliances, machinery and materials below the surface, which openings are tributary to one colliery and ventilated by one general air current or division thereof and connected by one general system over which coal is or may be delivered to one or more points outside the mine when such is operated by the one operator.

Shaft. The term "shaft" means a vertical opening through the strata that is or may be used for the purpose of ventilation or drainage or for hoisting men or material or both in connection with the mining of coal.

Slope. The term "slope" means an incline opening used for the same purpose as a shaft.

Workings. The term "workings" means all the excavated parts of a mine, those abandoned as well as those being worked.

Breaker. The term "breaker" means the structure containing the machinery used for the preparation of coal.

Approved Safety Lamp. The term "approved safety lamp" means any safety lamp approved by the Chief of the Department of Mines.

Operator. The term "operator" means any firm, corporation or individual operating any colliery, mine or other part thereof as owner, occupier or lessee.

Superintendent. The term "superintendent" means the person who shall have immediate supervision of one or more mines or collieries on behalf of the operator.

Mining Engineer. The term "mining engineer" means any person who is competent to survey and plot accurately the inside workings of a mine as well as the surface topography and who has had five years' practical experience at such work; or a graduate of a school of mines or some similar institution who has had three years' practical experience.

Mine Foreman. The term "mine foreman" means the person who is in charge of the inside workings of a mine or mines and of the persons employed therein.

Outside Foreman. The term "outside foreman" means the person in charge of all the outside operations of a colliery and the persons employed thereat.



**Miner.** The term "miner" means the person who blasts coal or rock and has charge of a working place, also any person engaged at general work in a mine who has the qualifications of a miner as herein prescribed.

**Working Place.** The term "working place" means a gangway, airway, breast, pillar, cross-heading, or any other place where coal is being mined.

**Chief.** The term "chief" means the Chief of the Department of Mines who is commissioned by the Governor and is charged with the supervision of the execution of the mining laws of this Commonwealth.

**Inspector.** The term "inspector" means the person commissioned by the Governor on behalf of the Commonwealth to have supervision of mines and collieries in the district allotted to him.

### ARTICLE III

#### Duties of Owner, Operator or Superintendent

Section 1. The owner or operator of every colliery shall appoint a person to be known as the superintendent. Provided, however, That any individual operator or any member of a firm operating any coal mine or colliery may act as superintendent of his respective colliery or collieries within the meaning of this act.

Provided further, That whenever the superintendent cannot personally comply with the provisions of this act he shall have the right to employ a sufficient number of assistants who shall be liable to the same penalties as the superintendent for any violation of this act.

Section 2. In order to secure efficient management, to promote the health and safety of the persons employed and to protect and preserve the property connected therewith, the owner, operator or superintendent shall appoint a certificated mine foreman for every mine, except as otherwise provided in section one of article six of this act, where twenty or more persons are employed therein; but no mine employing more than twenty persons shall be operated for a longer period than thirty days without the supervision of a mine foreman.

Section 3. The superintendent and the mine foreman shall employ a sufficient number of assistant mine foremen, and if the mine is liberating explosive gas in sufficient quantities to be detected by an approved safety lamp they shall also employ a sufficient number of fire bosses, so that the assistant foreman and fire bosses can comply with the provisions of this act as hereinafter provided.

Section 4. The superintendent of every mine shall provide and maintain ample means of ventilation to furnish a constant and adequate supply of pure air for the persons and animals employed therein.

Section 5. It shall be his duty on behalf and at the expense of the operator to keep on hand at each mine at all times a sufficient quantity of materials and supplies required to preserve the health and safety of the employes as provided by this act.

Section 6. He shall direct that all foremen employed under him shall comply with the provisions of this act, especially when his attention has been called by the inspector to any violations thereof.

Section 7. The superintendent of every mine shall provide a sufficient number of danger signals or signs. Such signals or signs shall be uniform and as designed by the Chief of the Department of Mines.

Section 8. He shall keep on hand at the mine a supply of printed rules and record books required by this act which shall be furnished through the inspector on request in writing, and he shall see that said rules and record books are delivered to the proper persons and that an abstract of that portion of this act known as General Rules, Special Rules and Article Twenty-four shall be posted up in legible characters in conspicuous places near the main entrance or checking station of the mine, which shall be protected and renewed when necessary.

Section 9. The superintendent shall employ a competent person to be called "outside foreman" who shall have charge of the breaker and the outside operations of every colliery. The mine foreman, the assistant mine foreman and the outside foreman shall be under the charge and direction of the superintendent. The operator shall be held responsible for any negligence on the part of any of the said mine officials.

Section 10. He shall see that no mine cars or motors shall be used inside or outside any mine unless the bumpers are of sufficient length and width to keep the bodies of said cars or motors separated by not less than twelve inches when the cars stand on a straight level road and the bumpers touch each other.

Section 11. He shall forthwith notify the inspector by telephone or telegraph or special messenger of any loss of life or of any serious accident inside or outside a mine whereby the lives of the employes are endangered.

Section 12. The operator or superintendent of a mine or colliery shall use every precaution to insure the safety of the workmen in all cases whether provided for in this act or not.

Section 13. The superintendent shall at least once each week read, examine carefully and countersign all the reports entered in the record book of the mine foreman. If he finds therefrom that any of the provisions of this act are being violated he shall at once call the attention of the mine foreman to the fact and shall order that said provisions be complied with forthwith.

Section 14. The superintendent of every colliery on or before the twenty-fifth day of January in each year shall send to the inspector a correct report of the year ending December thirty-first, which shall contain the name of the operator and officials of the colliery, the tons of coal mined, the quantity of gunpowder, dynamite and permissible explosives used, the number of persons employed inside and outside of each mine, those between the ages of fourteen and sixteen years and those between sixteen and twenty-one years and those above twenty-one years, separately, classifying the occupations of persons so employed, and also the number of days each breaker has been in operation. The reports shall be in such form and on such blanks and shall give such information regarding the mine or colliery as may be from time to time required and prescribed by the Chief.

Section 15. The superintendent of every colliery shall notify the inspector within fifteen days of the following occurrences:

(1) When any work has been commenced for the purpose of opening a new mine;

(2) When the working of a mine is resumed after an abandonment or a discontinuance for a period exceeding two months;

(3) When a mine has been abandoned or the working thereof discontinued;

(4) When any change occurs in the name of a colliery or in the name of the operator;

(5) When the pillars are to be removed.

He shall also forthwith notify the inspector of the following occurrences:

(1) When a serious fire occurs;

(2) When a dangerous body of gas is encountered;

(3) When a squeeze or any other cause that may endanger the safety of the employees occurs.

Section 16. The superintendent shall cause to be placed at every colliery a self-recording barometer which shall be properly cared for, and the records for each day shall be preserved in the mine foreman's office.

Section 17. An office to be known as the mine foreman's office shall be provided and maintained by the superintendent at or near the main entrance to each mine of sufficient size and dimensions to properly store and care for the maps and records required by this act to be kept and preserved.

Section 18. Any operator, superintendent or assistant superintendent who neglects to comply with any of the provisions of this article shall be deemed guilty of an offense against this act.

## ARTICLE IV

### Mine Maps

Section 1. The operator or superintendent of every mine shall make or cause to be made by a competent mining engineer an accurate map of the mine on a scale of one hundred (100) feet to the inch, which map shall show as follows:

First. All the openings, excavations, shafts, slopes, drifts, tunnels, planes, gangways, airways, breasts, and the name or number of each.

Second. An accurate delineation of the boundary lines between said mine and all adjoining mines or coal lands and the relation and proximity of the workings of said mine to all adjoining mines or coal lands; and if requested by the inspector the map or blue print in the office at the mine shall show by arrows the direction of the air currents in said mine with each split shown in different color.

Third. The elevation above or below mean tide of the top and bottom of each shaft, slope, drift, tunnel, plane and of gangways and also of breasts adjacent to boundary lines between such mine and any adjoining mine or mines at points to be not more than three hundred feet apart, and the location of streams, rivers, lakes, dams or any other bodies of water on the surface with their elevations accurately and plainly marked, the location and elevation of any body of water dammed in the mine, giving the true area of said body of water, unless inaccessible before the passage of this act, and also the location and number of all bore holes penetrating the coal strata, and a vertical section of the same shall be furnished to the inspector upon written request to the superintendent.

Section 2. A true copy of said map shall be kept in the mine foreman's office for the use of the mine officials and the inspector



and for the inspection (in the presence of the superintendent or the mine foreman) of any person working in said mine whenever he shall fear that his working place is becoming dangerous by reason of its proximity to other workings that may contain dangerous accumulations of water or noxious gases.

Section 3. At least once every six months the superintendent of every mine shall cause to be shown accurately on the original map of said mine, and on a true copy of the same kept at the mine foreman's office, all the excavations made therein during the time that has elapsed since such excavations were last shown thereon.

Section 4. The inspector's map of any particular mine shall be open for inspection, in the presence of the inspector, to any miner whenever said miner shall have cause to fear that his working place is becoming dangerous by reason of its proximity to other workings which may contain water or dangerous gases. Said map shall also be open to the inspection of any citizen interested, in the presence of the inspector.

Section 5. The owner, operator or superintendent at the request of the inspector in writing shall order that any portion of a mine be surveyed and entered on the original map and on the duplicate at the mine foreman's office, when in his opinion such portion of the mine is approaching accumulations of water or noxious gases. And whenever any of the workings or excavations of such mine have been driven to their destination it shall be the duty of the superintendent to see that the mining engineer checks up all his previous work and notes, so that he can certify that the said map shows correctly all the excavations made therein.

Section 6. The owner, operator or superintendent of every mine shall furnish the inspector with a true and correct copy of the aforesaid original map on tracing cloth and at the end of every six months thereafter the inspector shall return said copy to the superintendent, who shall place or cause to be placed thereon all the extensions made during the preceding six months, as provided for in section three of this article, and shall forward the map to the inspector within thirty days from the time of receiving it. Provided, that in lieu of the map on tracing cloth as aforesaid the superintendent shall have the privilege of furnishing a blue print showing the complete workings of the mine. When more than one seam of coal is being worked in any mine the inspector shall be provided with a separate copy of the original map on tracing cloth or a blue print of the complete workings of each seam as provided for in this article. The copies of the maps of the several mines as hereinbefore required to be furnished to the inspector shall remain in his care as official records pertaining strictly to the office of said inspector, to be transferred by him to his successor in office, and in no case shall any copy thereof be made without the consent of the superintendent in writing.

Section 7. Whenever a mine or a portion thereof is worked out or abandoned the superintendent shall within thirty days thereafter have the inspector's map extended to show clearly all the worked out or abandoned territory, with all property and boundary lines and elevations as required in section one of this article.

Section 8. The owner, operator or superintendent of the abandoned mine shall also within sixty days after its abandonment send to the Department of Mines a tracing of said complete original map

which shall be kept in the department as a public document, and the mining engineer shall certify that said tracing is a true and correct copy of the said map and that the original map is a true, complete and correct survey of all the excavations made in said abandoned mine.

Section 9. If the inspector shall have reason to believe that any map of any mine, furnished to him in pursuance of the provisions of this article is inaccurate or imperfect, he is hereby authorized to have a special survey made and a map thereof. The cost of said survey and map shall be recoverable by law from the owner or operator, as other debts are recoverable by law. Provided, however, That if the map claimed by the inspector to be inaccurate or imperfect shall be found sufficiently accurate to serve the purpose for which it is intended, then the Commonwealth shall be liable for the expense incurred in making said survey and map, which expense shall be paid by the State Treasurer upon warrant of the Auditor General issued upon presentation of voucher approved by the Chief of the Department of Mines.

Section 10. If it shall be shown that the said owner, operator or superintendent has knowingly or designedly caused or allowed such map or plan, when furnished, to be incorrect or false, such owner, operator or superintendent thus offending shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine not exceeding five hundred dollars or imprisonment not exceeding three months, at the discretion of the court.

Section 11. Any person, firm or corporation neglecting or failing to comply with any of the provisions of this article shall be deemed guilty of an offense against this act.

## ARTICLE V

Boards to Examine Applicants for Certificates of Qualification as Mine Foreman, Assistant Mine Foreman and Fire Boss

Section 1. On petition of the inspector of any district, the court of common pleas in any county in said district shall appoint on or before the third Tuesday in January in each year, for said inspection district, an examining board of three persons to be known as the Mine Foreman's Examining Board, consisting of said inspector, a miner and a superintendent, who shall be residents of said district. The miner so appointed shall have had at least five years' practical experience as a miner in gaseous mines and be at the time of appointment in actual practice, and the superintendent shall also have had five years' experience as a superintendent of gaseous mines. All members of said examining board shall be citizens of the United States and shall, after being duly organized, take and subscribe to, before an officer authorized to administer the same, the following oath, namely,

"I, the undersigned, do solemnly swear (or affirm) that I will perform the duties of examiner of applicants for certificates of qualification as mine foremen, assistant mine foremen and fire bosses; that I will not divulge or make known to any person any questions prepared for the examination prior thereto, or in any manner assist any applicant to pass the examination; but will be governed by the evidence of the qualifications of the applicants to fill said positions and not by any consideration of political or personal favor, and that I will certify all whom I may find qualified in accordance with the law."

Section 2. Any vacancy that may occur in the membership of the board of examiners shall be filled by the court of common pleas in accordance with the provisions of section one of this article.

Section 3. Any member of any board of examiners who divulges or makes known any question prepared for an examination prior to such question being handed to the applicants at the examination, or in any manner assists any applicant to pass the examination, shall be deemed guilty of an offense against this act.

Section 4. The members of the boards of examiners appointed as provided in section one of this article, with the inspectors in office, shall meet in the city of Hazleton each year on the second Tuesday in April for the purpose of discussing the nature and scope of the theoretical and practical questions to be given the applicants and to adopt rules to govern the examinations and to decide any other important matter pertaining to their duties.

Section 5. The members of said boards shall select at such meeting a committee of six of their number comprising two inspectors, two miners and two superintendents, who shall meet in the city of Harrisburg on the third Tuesday in April to formulate a code of questions to be used at the next succeeding examinations. This committee shall select one of their members as chairman and one as secretary. The questions prepared by the said committee shall be printed under the personal direction of the chairman and sent by him by registered mail in sealed packages, each package containing a set of questions for each session, to the chairman of each board of examiners, who shall break the seal and open the package at the commencement of each session in the presence of the applicants and the other members of the board.

Section 6. The said board of examiners shall meet in their respective districts at the call of the Inspector, on the third Tuesday in May, at a place designated by him to examine applicants for mine foremen, assistant mine foremen and fire bosses. Public notice of said meeting shall be given twice a week for two weeks in two daily newspapers published in the district prior to the holding of said examinations.

Section 7. After the examinations are over and before the several boards meet to examine the papers of the applicants the said committee of six shall meet in the city of Wilkes-Barre, not later than seven days after such examinations, to prepare answers to the questions propounded, and these answers shall be printed and sent by registered mail to the chairman of each board to be used in the rating of the value of the answers to the questions as given by the applicants. While preparing answers to the questions the committee is hereby authorized to engage the services of a clerk whose compensation and mileage shall be the same as that of the members of the committee.

Section 8. The members of each board, except the inspector, shall receive six dollars a day for every day actually employed, not exceeding twelve days in all, and mileage at the rate of two and one-half cents a mile for every mile traveled by the shortest route in going to and from the place of meeting. Provided, that the mileage shall be paid but once for each continuous session of the board, and by a continuous session is meant a session of not less than four days in each week. Provided further, that the members of the committee of six, except the inspectors, shall each receive ad-



ditional compensation at the rate of six dollars a day for the time spent in preparing the questions and answers, together with mileage as hereinbefore provided, and all other necessary expenses.

Section 9. The chairman of each board of examiners shall on final adjournment send to the Chief of the Department of Mines properly attested vouchers for compensation and mileage of each member of the board. The Chief shall then approve all proper vouchers and transmit them to the Auditor General who shall issue a warrant for their payment to the State Treasurer.

Section 10. Applicants must appear before the board of examiners of which the inspector of the district where they work is a member, and all persons who desire to attend the examination shall notify the chairman of the board of their intention if possible not less than six days prior to the day set for the examination.

Section 11. Applicants for certificates of qualification as mine foremen, assistant mine foremen and fire bosses shall be citizens of the United States, at least twenty-three years of age, and shall have had at least two years' practical experience as miners in the anthracite mines of Pennsylvania.

All applicants shall be able to read and write the English language intelligently, and shall furnish the board with certificates from trustworthy persons as to their character and temperate habits, and also from superintendents and foremen showing the length of their services in the different mines.

Section 12. Certificates of qualification as mine foremen shall be granted to persons who have given to the board of examiners satisfactory evidence of their ability to perform their duties and who shall have received an average of at least eighty per centum in the examination.

Section 13. Certificates of qualification as assistant mine foremen shall be granted to persons who have given to the board of examiners satisfactory evidence of their ability to perform their duties and who shall have received an average of at least seventy per centum in the examination.

All applicants for certificates as mine foremen and assistant mine foremen must also undergo an oral examination of their practical experience with dangerous gases found in mines.

Section 14. Certificates of qualification as fire bosses shall be granted to persons who have given to the board of examiners satisfactory evidence of their ability to perform their duties and who shall have received an average of at least sixty per centum in the examination.

Section 15. Before such examination each applicant shall pay to the board of examiners the sum of one dollar and, if successful, two dollars additional for a certificate. All money received by the boards of examiners shall be transmitted to the Chief of the Department of Mines, who shall pay the same into the State Treasury, less the cost of issuing and recording the certificates.

Section 16. Each board of examiners, or at least two members thereof, shall certify to the Chief on forms furnished by him the name of every person whose examination shall disclose his fitness for the duties of mine foreman, assistant mine foreman or fire boss, who shall then prepare certificates of qualification for the successful applicants and send them to the inspector for distribution. Each certificate shall contain the full name, age and place of birth of ap-

plicant and also the length and nature of his previous service in or about the mines. The certificates shall be in manner and form as prescribed by the Department of Mines.

Section 17. Each board of examiners shall send to the Department of Mines the answers of each applicant to the questions propounded, with all other papers, together with the tally sheets, and a list of the questions and answers as prepared by the committee of six, which shall be filed therein.

Section 18. It shall be unlawful to employ a mine foreman, an assistant mine foreman or a fire boss who has not obtained the proper certificate of qualification as required by this article. Provided, that all persons holding certificates of qualification or service as mine foremen or assistant mine foremen, granted prior to this act, may continue to serve as such without further examination.

Section 19. In case of the loss or destruction of a certificate, the Chief shall issue a duplicate thereof to the person losing the same, on payment of the sum of one dollar. Provided, that it shall be shown to the satisfaction of the Chief by affidavit that the loss or destruction has actually occurred.

Section 20. If any person shall forge a certificate or knowingly make or cause to be made any false statement in procuring such certificate issued under this act, or shall make use of such forged or false certificate or duplicate thereof, or shall make use of any false declaration, representation or statement in any such certificate or duplicate thereof or any document containing the same, he shall be deemed guilty of an offense against this act.

## ARTICLE VI

### Duties of Mine Foreman and Assistant Mine Foreman

Section 1. To secure efficient management every mine where twenty or more persons are employed inside shall be under the direction of a mine foreman who shall have full charge of the inside workings and of all the persons employed therein, so that the provisions of this act, so far as they relate to him, shall be complied with, and he shall direct that the regulations prescribed for each class of workmen be complied with. Provided, however, that a mine foreman may have charge of several detached openings of the same colliery. And provided further, that in a mine where less than twenty persons are employed they shall be under the charge and direction of an assistant mine foreman.

Section 2. He shall have charge of all matters pertaining to ventilation, and the speed of the ventilators shall be particularly under his charge and direction. He shall post a notice at the fan engine house stating the least number of revolutions per minute the ventilator shall run.

Section 3. Every working place shall be examined at least once each working day, and whenever the mine foreman cannot personally comply with this provision, he shall employ as provided in section three of article three of this act a sufficient number of assistant mine foremen to make such examinations wherever practicable during working hours and he shall give special care and attention to miners engaged in removing pillars.

Section 4. The mine foreman or assistant mine foreman shall once every two weeks on the first and third Mondays of each month,

or as soon thereafter as practicable, while the mine is in operation measure the air current at or near the main inlet and main outlet and also in the main inlet and outlet of each split in the cross-heading nearest the face of the first inside working breast and in the inside cross-heading nearest the face in the last outside working breast of each split of air, and he shall make a record of such measurements with ink in a book prepared for that purpose. Said record shall also designate the area of each opening, the velocity of the air therein and the number of persons employed in each split, with dates when such measurements were taken. An exact copy of such measurements and records shall be sent to the inspector not later than the eighth day of the following month.

Section 5. The mine foreman shall devote his time to his duties in the mine while the same is in operation and shall keep a careful watch over the ventilation, airways, traveling ways, timbering and drainage and shall see that all stoppings between gangways and airways are properly built as provided for in section five of article fourteen of this act. He shall see that proper cross-headings are made in pillars of all breasts and gangways at such distance apart as in his judgment may be necessary, but the face of any breast shall not be more than sixty feet distant from the gangway or last cross-heading; and he shall see that cross-headings are closed when necessary or when ordered closed by the inspector in writing and that in gaseous mines a cross-heading is driven at the face of every breast when finished.

Section 6. The mine foreman, assistant mine foreman or fire boss shall once each week examine carefully all accessible openings to all abandoned portions of a mine where explosive gas has been or is being generated and all dangers found therein shall be immediately removed if practicable. A report of said examination shall be recorded with ink in a book kept in the mine foreman's office and signed by the persons who made the examination.

Section 7. The mine foreman or an assistant mine foreman shall see that every working place is properly secured by props, timbers or otherwise, that no person is permitted to work in an unsafe place, unless it be for the purpose of making it secure, and that safety in all respects is assured; and if any employe neglects to carry out or disobeys the instructions given in regard to securing his working place, and through such negligence or disobedience shall cause serious injury or loss of life to any person, he shall report such employe to the inspector for prosecution.

Section 8. The mine foreman shall see that the miners are provided with the necessary props, timbers and cap pieces of suitable sizes, which shall be delivered at the working faces or as near thereto as they can be conveyed in mine cars, when requested by the miner, that the props are cut square on one end and as near as practicable to the proper length as given by the miner, and, if for any reason the said props, timbers and cap-pieces are not provided, the mine foreman shall withdraw the men from the mine or from the portion of the mine affected which is dangerous to life and limb until such props, timbers and cap pieces are received.

Section 9. The mine foreman or a competent person or persons designated by him shall each working day examine the shafts, slopes, traveling ways, signal apparatus and all machinery connected therewith, to see that they are in safe and efficient working condition, so as to safeguard life and property. The person making such ex-



amination shall report the same in writing with ink each day in a book kept for that purpose, signing his name and giving the date of the examination.

Section 10. When an assistant mine foreman is employed his duty shall be to assist the mine foreman in carrying out the provisions of this act. In the absence of the mine foreman through sickness or otherwise one of the assistant mine foremen designated by the superintendent may perform the duties of the mine foreman and shall be liable to the same penalties as the mine foreman for any violation of this act.

Section 11. Each assistant mine foreman shall make a daily report with ink in a book provided for that purpose, stating the general condition of the working places visited in the portion allotted to him by the mine foreman, and he shall make a note of any danger observed and sign his name thereto. The mine foreman shall read carefully the daily report of each assistant mine foreman and shall countersign such reports with ink not later than the following day.

Section 12. The mine foreman shall each day enter plainly with ink in a book provided for that purpose a brief report of the condition of the portion of the mine examined by him and shall state clearly any danger that may have come under his observation, and sign his name thereto.

Section 13. In a mine wherein explosive gas has been liberated within one year before the passage of this act, or shall be liberated after the passage of this act, in sufficient quantities to be detected by an approved safety lamp, the mine foreman shall employ a sufficient number of fire bosses (whenever he is unable to make the examination himself) in order that each mine shall be examined in accordance with the provisions of article seven of this act, and he shall see as often as practicable that such fire boss has left his mark in places reported as examined. He shall each day read carefully and countersign with ink all daily reports entered in the record book of the fire boss.

Section 14. The mine foreman of a mine liberating explosive gas shall at or near the bottom of each shaft or slope or on the surface provide a permanent station where a proper danger signal or sign, designated by letters and colors, shall be placed thereon, and no persons shall pass said station as long as the danger signal or sign is so posted.

Section 15. When the workings of a mine are a mile or more from the bottom of a shaft or slope the mine foreman, with the consent of the inspector in writing, may provide a permanent station for the use of the fire bosses with danger signal or sign attached as provided in section fourteen, and no person shall pass said station so long as the danger signal or sign is posted thereon. In said station a fire proof vault of ample dimensions shall be erected of brick, stone or concrete in which the temporary record book of the fire boss shall be placed and locked for safe keeping during their absence.

Section 16. When the permanent station of the fire bosses is located a mile or more from the bottom of a shaft or slope, all abandoned, finished or unfinished workings in the intervening distance shall be completely shut off from the traveling way (which shall be in the intake) by stoppings of stone or brick laid in cement or lime mortar or by concrete of sufficient thickness or with other suitable material, approved in writing by the inspector, so as to prevent

noxious or explosive gases from coming in contact with the employees while going to or returning from their work.

Section 17. The mine foreman shall see that all working places and roadways and all other places of the mine are kept free from standing gas. Any accumulation of explosive gas or noxious gases in the worked-out or abandoned portion of a mine shall be removed as soon as possible after its discovery, if practicable. No person except those employed in the removal of the same shall be allowed in that portion of the mine until such gases are removed or rendered harmless.

Section 18. The mine foreman shall see that all dangerous places in the mine are properly fenced off across the openings, so that no person can enter, and that danger signals or signs are posted thereon. He shall notify the superintendent in writing whenever in his opinion the mine is becoming dangerous through the lack of ample ventilation, squeeze or from any other cause beyond his control.

Section 19. The mine foreman shall see that in a place that is being driven within supposedly dangerous proximity to an abandoned mine or a portion of the same suspected of containing explosive gas, noxious gases or an accumulation of water, at least one bore hole shall be maintained not less than twenty feet in advance of the face, and on each side bore holes of the same depth shall be drilled at right angles not more than ten feet apart and the opening shall not be more than twelve feet wide.

Section 20. The mine foreman shall see that no dangerous accumulation of water or gas shall be tapped from the mine or any abandoned portion thereof until all the employees are out except those engaged at the work of tapping, and such work shall be done with locked safety lamps under the immediate supervision of the mine foreman or assistant mine foreman.

Section 21. In case of accident to a ventilator or its machinery whereby the ventilation of the mine or portion thereof is seriously interrupted, he shall order the employees to withdraw immediately from the mine or the portion thereof affected and they shall not be allowed to return to their work until the ventilation has been restored and the mine examined by the mine foreman, assistant mine foreman or fire boss and reported safe.

Section 22. The mine foreman, assistant mine foreman or fire boss shall have the right, if he deems it necessary for the protection of life and property, to make a personal examination of any employee about to enter a gaseous mine or portion thereof where locked safety lamps are used, and he shall not allow such employee to go to his work until it shall be satisfactorily shown that no prohibited articles are concealed about the employee's body.

Section 23. The mine foreman and the assistant mine foreman shall as often as practicable see that the diameter of the bits of all drills is at least one-eighth of an inch larger than the diameter of the cartridge in use, so as to prevent the forcing of a tight cartridge into any hole.

Section 24. At the foot of every shaft or slope where persons are hoisted therefrom the mine foreman shall provide a comfortable waiting room for shelter and protection and of ample dimensions to seat from ten to twenty persons.

Section 25. The mine foreman shall see that the height of gangways or traveling ways wherein employees have to travel into and out

of the mines shall not be less than five feet. Where such height is impracticable the employes at their request shall be hauled into and out of the mine at the beginning and end of each shift.

Section 26. The mine foreman shall see that in all gangways or main haul-roads driven prior to the passage of this act, where coal is hauled and where employes travel, there is sufficient width to permit persons to pass moving cars with safety, and if in the judgment of the inspector sufficient width has not been provided then safety holes not more than one hundred and fifty feet apart on gangways or roads where coal is hauled by animal power, and not more than seventy-five feet apart when coal is hauled by motive power, shall be made on one side of the passageway, which hole shall not be less than two feet deep by four feet wide and shall be level with the road, white-washed and kept free from obstructions.

Section 27. The mine foreman shall see that all gangways and main haulage roads driven after the passage of this act, where employes travel and coal is hauled thereon, shall have a clear space of two and one-half feet from the side of the car to the rib or lagging, which shall be made and continued throughout on the one side of said passageway if in the judgment of the inspector the conditions will permit; all such space shall be kept free from obstructions. Provided, however, That if found impracticable by the inspector to provide such clearance then safety holes shall be made as required in section twenty-six of this article. Provided, further, That this section shall not apply to a distance within three hundred feet from the face of a gangway or main haulage road.

Section 28. If at any time it is found by the person in charge of the mine or any portion thereof, that for any cause whatever, the same has become dangerous, every precaution shall be taken to insure the safety of the employes and every employe, except such as may be required to remove the danger, shall be withdrawn from the mine or portion thereof until it is examined by the mine foreman, assistant mine foreman or fire boss and reported safe.

Section 29. The mine foreman shall see that locked safety lamps are used where in his judgment the use of open lights is a menace to life and property, and that only permissible explosives shall be allowed for blasting purposes in such places.

Section 30. He shall provide suitable lighted signals to be placed on the end of all trips operated in the mine by motors.

Section 31. The transportation of explosives and tools into and out of the mine shall be under the direction of the mine foreman.

Section 32. He shall direct and see that efficient safety blocks or devices are placed for the purpose of preventing cars from running into shafts, slopes or planes where employes are hoisted or traveling therein, and shall see that they are maintained in good working condition.

Section 33. A miner when first employed shall have his attention called by the mine foreman to article twenty-four of this act.

Section 34. Any mine foreman or assistant mine foreman who fails or neglects to carry out the provisions of this article or of any other article that relates to his duties shall be deemed guilty of an offense against this act.



## ARTICLE VII

## Duties of Fire Boss

Section 1. It shall be the duty of the fire boss to examine carefully every morning before the men enter the mine every working place, all places adjacent to live workings, every roadway and every unfenced road to abandoned workings and falls; but before entering the mine he shall satisfy himself that the ventilating apparatus is running at the speed designated by the mine foreman, and before proceeding with the examination he shall see that the air current is traveling in its proper course. In making the examination for gas he shall use no light other than that enclosed in an approved safety lamp. Provided, however, That in addition thereto he may use an approved electric lamp for other examinations. The examination shall begin within three hours prior to the appointed time for men to enter the mine. The fire boss shall examine for all dangers in all portions of the mine under his charge and after such examination shall leave at or near the face of every place the date as evidence that he has performed his duty. He shall also examine the entrance or entrances to all worked-out and abandoned portions adjacent to the roadways and working places under his charge, where explosive gas is likely to accumulate, and he shall place a danger signal or sign across the entrance to every working place and every other place where explosive gas is discovered or where immediate danger is found to exist from any other cause and said signal or sign shall be sufficient warning for persons not to enter.

Section 2. A suitable record book shall be kept in the mine foreman's office on the surface, or at a station located near the bottom of a shaft or slope, or at a station a mile or more from a shaft or slope, and on the return of the fire boss to said station he shall enter with ink in said record book the condition of the portion examined, giving the date, and sign his name to the same. Such record shall show the time taken in making the examination and shall clearly state the location and nature of any danger that may have been discovered, and he shall immediately report the location thereof to the mine foreman or an assistant mine foreman.

Section 3. No person shall enter the mine or any portion thereof until the fire boss returns to the station on the surface or to a station near the bottom of a shaft or slope or to a station located a mile or more from the shaft or slope, as the case may be, and reports that the mine or the portion thereof is safe for men to enter. When the station is located a mile or more from the foot of the shaft or slope, he shall report to the mine foreman or an assistant mine foreman by telephone or otherwise, and it shall be his duty when stations are located inside the mines to keep his record book locked in a vault provided for that purpose whenever he is absent from the station.

Section 4. A second examination shall be made by him each working day when practicable, during working hours, of every working place previously examined where men are employed, and he shall give special attention to the condition of the roof and sides and the general condition of each working place as to its safety, and if he discovers any working place in a dangerous condition he shall direct the miner to secure the place at once, if practicable, but if it cannot be made safe he shall withdraw the men immediately and report the matter to the mine foreman.

Section 5. It shall not be lawful for any person (except the mine foreman and in case of necessity such other persons as may be designated by him) to pass beyond a danger signal until the mine or the portion thereof has been examined and reported to be safe, and he shall not allow any person to remain in any portion of the mine through which a dangerous accumulation of explosive gas is being passed in the ventilating current.

Section 6. Any fire boss who neglects to comply with the provisions of this article relating to his duties or who shall make a false report of the conditions of any place in the portion of the mine allotted to him for examination shall be deemed guilty of an offense against this act and upon conviction his certificate shall be revoked by the Chief. Provided, however, that he may again be an applicant for a certificate at any regular examination after the expiration of six months; but if found guilty of a second offense his certificate shall be revoked and he cannot be an applicant for re-examination.

## ARTICLE VIII

### Duties of Outside Foreman

Section 1. The owner, operator or superintendent of every colliery shall appoint a person to be known as outside foreman. Provided, that nothing in this act shall be construed as to prevent the superintendent from also acting in the capacity of outside foreman where the circumstances will permit of such an arrangement.

Section 2. The outside operations of every colliery shall be under the charge and direction of the outside foreman whose duty shall be to see that the provisions of this act so far as they apply to him are obeyed and carried out.

Section 3. The outside foreman shall see that all dangerous machinery is properly protected, and especially in breakers, such as engines, rolls, wheels, screens, shafting, belting and conveyor lines; the sides of stairs, trestlings and plank walks shall be provided with hand or guard railings for protection; but this section shall not forbid the temporary removal of a fence, guard rail or covering for the purpose of repairs, if precaution is taken, but which shall be replaced immediately thereafter.

Section 4. The outside foreman shall employ a sober and competent person not under eighteen years of age as a breaker engineer who shall attend to such engine while the same is in motion.

Section 5. A signal apparatus shall be placed at important points in every breaker so that in case of accident the engineer can be promptly notified to stop the machinery.

Section 6. The outside foreman shall not employ an oiler for said breaker machinery under sixteen years of age, but such oiler or any other employe shall not oil dangerous parts of such machinery while in motion.

Section 7. The outside foreman shall not employ any person under the age of fourteen years to do any work in the breaker or at any other work on the surface.

Section 8. The outside foreman, where coal dust in a breaker is injurious to the health of the persons employed therein, shall immediately adopt measures for the removal of the same as far as practicable and see that the breaker is heated by steam or hot water and kept at a temperature so as to preserve the health of the persons employed therein.

Section 9. In shafts or slopes where men are lowered from or hoisted to the surface the outside foreman shall as often as necessary see that the part of the rope inserted in the cone is cut off (as much as may be found defective) and the cone readjusted and that no doubtful ropes are allowed to be used in lowering or hoisting employees.

Section 10. Any outside foreman who neglects or fails to comply with any of the provisions of this article shall be deemed guilty of an offense against this act.

## ARTICLE IX

### Mine Inspectors' Examining Board

Section 1. The Governor shall appoint during the month of June one thousand nine hundred and thirteen and every four years thereafter five citizens of this Commonwealth and residents of the Anthracite region, who shall be men of good repute and at least thirty-five years of age, to be known as the Mine Inspectors' Examining Board whose duty it shall be to examine applicants for the office of mine inspector. Two of the members of said board shall be mining engineers of not less than five years' practical experience in mines and mining; three shall be miners in actual practice who shall have had at least five years' practical experience as miners in Anthracite mines generating explosive gas.

The members of said Board shall each receive the sum of ten dollars a day for each day actually employed, not exceeding thirty-five days in all, and all necessary expenses incurred in carrying out the provisions of this article, which shall be paid out of the State Treasury on warrant of the Auditor General issued upon presentation of vouchers properly made out and sworn to by each member of the Board and approved by the Chief of the Department of Mines. The Board is hereby authorized to engage the services of a clerk whose compensation shall be the same as that of the members of the Board. Any vacancy that may occur in the membership of the Board shall be filled by the Governor.

Section 2. The said Board of Examiners shall meet in the city of Harrisburg on the second Tuesday in July following its appointment to prepare questions and answers thereto and formulate rules for conducting and governing the examination, provided there be a vacancy in the office of inspector. The members of the Board after being duly organized shall each take and subscribe to before any officer authorized to administer the same the following oath, namely:

"I do solemnly swear, (or affirm) that I will perform the duties of examiner of applicants for appointment as inspector to the best of my ability and that in recommending or rejecting said applicants I will be governed by the evidence of their qualifications to fill the position and not by any consideration of political or personal favor, and that I will certify all applicants who may be found qualified and no others according to the true intent and meaning of the law."

The oaths of the members of the Examining Board shall be filed in the Department of Mines.

Section 3. On the fourth Tuesday in July, public notice having been given for two weeks prior thereto in two newspapers published in the district where any such vacancy exists, the Board shall meet again in the city of Harrisburg to examine applicants for the office of inspector whose qualifications shall be certified to the Board and be as follows: They shall be citizens of this Commonwealth and



residents of the anthracite region, of temperate habits, of good repute, of personal integrity, in good physical condition and not under thirty-five nor over fifty-five years of age. Provided, That this age limit shall not apply to inspectors now in office. They shall have a comprehensive knowledge of the different systems of working and ventilating coal mines and shall have had at least ten years' practical experience in mines as miners, fire bosses, mine foremen or superintendents, five years of which immediately preceding their examination shall have been in the anthracite mines of this Commonwealth. They shall have had practical experience with explosive gas, dangerous and noxious gases generally found in coal mines and shall have a general knowledge of mines, mining and machinery and of chemistry of gases generally found in coal mines. They shall be conversant with the work of first aid corps and with the work and requirements of the rescue corps. They shall be conversant with the science and use of electricity as applied to coal mines and shall have sufficient knowledge of the science of mining engineering to enable them to understand and read the mine workings of any mine as shown on maps presented at the examination, and to make a cross section of any mine from said maps when so required by the examining board. They shall give evidence of such theoretical as well as practical knowledge and general intelligence respecting mines and mining and the working and ventilation of mines as will satisfy the board of their capability and fitness for the important duties imposed upon the inspectors by the provisions of this act.

After the passage of this act no person shall be eligible to the position of inspector unless he shall prove to the satisfaction of the Mine Inspectors' Examining Board that he has served as a practical miner for at least five years. Provided, That this shall not apply to inspectors now in office.

Section 4. The principal examination shall be in writing and each applicant shall also undergo an oral examination pertaining to explosive gas and noxious gases, safety lamps and general methods of mining. The questions and answers in the oral examination shall be reported verbatim by an expert stenographer and typewritten fully to assist the board in the work of rating the qualifications of the applicants. The applicants who have made a general average of at least ninety per centum shall be deemed successful.

Section 5. The manuscripts and all other papers of the applicants in the principal examination, together with the tally sheets and the correct solution of each question as prepared by the examining board and also the stenographic report of the oral examination, shall be filed in the Department of Mines. The examining board or at least four members thereof shall certify to the Governor and also to the Chief of the Department of Mines the names and percentages of all successful applicants who are properly qualified under the provisions of this article to fill the office of inspector. A certificate of qualification prepared by the Chief of the Department of Mines shall be issued to each successful applicant.

The examining board shall as soon as practicable after the examination furnish to each candidate examined a typewritten copy of all questions (oral and written) given at the examination marked "solved right" "imperfect" or "wrong" as the case may be.

Section 6. The Governor shall from the names certified to him by the examining board commission a person having the highest percentage in the examination to be inspector for each district where a

vacancy exists. Provided, however, That no person shall be eligible who has received a less rating than ninety per centum in the examination. The inspectors so named during one thousand nine hundred and thirteen shall serve until December thirty-first one thousand nine hundred and fifteen. The inspectors elected or appointed under the provisions of the act of one thousand nine hundred and one entitled "An act amending article two of an act entitled 'An act to provide for the health and safety of persons employed in and about the anthracite coal mines of Pennsylvania and for the protection and preservation of property connected therewith,' approved the second day of June, Anno Domini one thousand eight hundred and ninety-one," shall continue to serve until December thirty-first one thousand nine hundred and fifteen. After January first one thousand nine hundred and sixteen the term of all inspectors shall be four years.

Section 7. When a vacancy occurs in the office of inspector by death or otherwise the Governor shall commission for the unexpired term from the names on file in the Department of Mines the person having the highest percentage in the examination to fill said vacancy. When the number of applicants who have received at least ninety (90) per centum shall be exhausted the Governor shall cause the examining board to meet for a special examination and examine the persons who may present themselves for examination in accordance with section three of this article and the board shall certify to the Governor and also to the Chief of the Department of Mines the names of all applicants who have made a general average of at least ninety per centum in said examination, as provided for in section four of this article, and the one receiving the highest percentage shall be commissioned by the Governor according to the provisions of section six of this article for the office of inspector for the unexpired term. Special examinations shall be conducted in the same manner as regular examinations.

Section 8. After the passage of this act the salary of the inspectors shall be three thousand and six hundred dollars (\$3,600.00) a year to be paid quarterly by the State Treasurer on warrant of the Auditor General issued upon the presentation of voucher approved by the Chief of the Department of Mines. Each inspector may also incur traveling and such other expenses as may be necessary for the proper discharge of his duties under the provisions of this act, which shall be paid quarterly by the State Treasurer on warrant of the Auditor General issued upon the presentation of vouchers properly made out and sworn to by the inspector and approved by the Chief of the Department of Mines. Each inspector shall have an office in his district which may be at his place of residence. Provided, that a suitable room approved by the Chief be set apart for that purpose. The Chief of the Department of Mines shall have authority to procure for the inspectors on their request furniture, instruments, chemicals, typewriters, stationery and all other necessary supplies, which shall be paid for by the State Treasurer on warrant of the Auditor General issued upon the presentation of vouchers approved by the Chief. All furniture, instruments, plans, books, memoranda, notes and other materials pertaining to the office of inspector shall be the property of the State and shall be delivered by the inspector to his successor in office.

Section 9. The inspectors shall be allowed all necessary expenses incurred by them in enforcing the several provisions of this act in

the respective courts of this Commonwealth, provided they have the consent of the Chief of the Department of Mines before such expenses are incurred, the same to be paid by the State Treasurer on warrant of the Auditor General issued upon the presentation of itemized vouchers approved by the court before which the proceedings were instituted and also by the Chief of the Department of Mines.

Section 10. Each inspector shall before entering upon the discharge of his duties give a bond to the Commonwealth in the sum of five thousand dollars with sureties to be approved by a judge of the court of common pleas of the district conditioned for the faithful discharge of his duties and shall take an oath or make affirmation that he will discharge his duties with impartiality and fidelity.

Section 11. In case any inspector becomes incapacitated to perform the duties of his office or is granted leave of absence by the Chief of the Department of Mines, it shall be the duty of the Governor at the request of said Chief to appoint temporarily to the office a person on the eligible list of applicants filed in the Department of Mines. The temporary inspector shall act until the regular inspector is able to resume the duties of his office and shall be paid in the same manner as hereinbefore provided for the payment of the regular inspector.

Section 12. No inspector under this act shall act as manager of any coal mine or as agent or as mining engineer for any company or be interested in the operation of any anthracite coal mine of this Commonwealth.

Section 13. Any member of the Board of Examiners or clerk or stenographer employed by the Board who fails to comply with the provisions of this article shall be deemed guilty of an offense against this act.

## ARTICLE X

### Duties of Inspector

Section 1. The inspector shall devote the whole of his time to the duties of his office. It shall be his duty to examine thoroughly each mine and the outside workings thereof as often as possible, but at least once every three months, giving special attention to all mines liberating explosive gas and to all other mines where unusual dangers exist or may be suspected to exist, to see that all the provisions of this act are complied with, especially those that affect the safety of life, health and property therein and those that demand that the air current be carried to the working faces. He shall keep in his office a record of all such inspections showing the general condition in which he finds the mine, especially with reference to its condition as to safety and ventilation and also drainage, where employes travel therein, the number of persons employed inside and the number of serious accidents, showing the nature and causes thereof, the number of deaths resulting therefrom, and such other information as he may deem necessary or as may be required by the Chief of the Department of Mines.

Section 2. It shall be the duty of the inspector when making his regular inspections to read and examine carefully the record books of the mine foreman, assistant mine foreman and fire boss. Upon the discovery that the law is not being complied with he shall notify the mine foreman to that effect in writing and if the same offense



is found the second time his duty shall be to forthwith prosecute the guilty party. He shall also see that all notices are posted in compliance with the provisions of this act.

Section 3. It shall be the duty of the inspector to see as far as practicable that all the provisions of this act are observed and obeyed. Provided, that whenever he is in doubt regarding the enforcement of certain provisions he shall refer the matter to the Chief of the Department of Mines who shall render a decision as soon as possible and said decision shall be final unless the superintendent shall within seven (7) days of the receipt thereof appeal from such decision to the court.

Section 4. To enable the inspector to perform the duties imposed upon him by this act he shall have the right at all times to enter any mine in his district or in any other district when directed to do so by the Chief of the Department of Mines to make inspection or to obtain information, and upon the discovery of or being informed of any violation of this act which may endanger life or limb, or if he finds any other thing or practice not covered by the provisions of this act which may endanger life or health of the employes, he shall at once notify the mine foreman in writing to remove forthwith said dangerous conditions. If the mine foreman fails to comply he shall immediately apply in the name of the Commonwealth to the court of common pleas of the county in which said mine is located or to a judge thereof in chambers for a writ of injunction to enjoin the operation of all work in said mine or portion thereof. Whereupon said court or a judge thereof shall at once proceed to hear and determine the case and if the cause appears to be sufficient, after hearing the parties and their evidence as in like cases, shall issue its writ to restrain the working of said mine or portion thereof until all cause of danger is removed. The cost of said proceedings shall be borne by the operator. Provided, That should said court or a judge thereof find said allegations not sufficient said case shall be dismissed and the costs shall be borne by the county wherein said mine is located. Provided also, that should any inspector find during his inspection of a mine or a portion thereof such dangerous conditions existing therein that in his opinion any delay in removing the workmen from such dangerous places might cause loss of life or serious personal injury said inspector shall have the right to temporarily withdraw all persons from such dangerous places until the foregoing provisions of this section can be carried into effect.

Section 5. It shall be his duty after the final inspection of any mine to make out a written report on forms furnished by the Department of Mines, which shall show the general condition thereof, the dates of all inspections, the number of cubic feet of air entering the mine and the number of cubic feet of air as found in the return airway outside the last cross heading in each split, together with the number employed in each split. The report shall contain such other information as he may deem necessary or as may be required by the Chief of the Department of Mines. Said report shall be conspicuously posted at the mine and protected, where it shall remain until the next final inspection is made and a copy shall be sent forthwith to the Chief. Said report shall be preserved in the office of the inspector for one year.

Section 6. It shall be the duty of the inspector to visit each emergency hospital in the mines of his district once every three months.

see that the law is being complied with and examine the records of said emergency hospitals. He shall notify the superintendent in writing of any neglect or non-compliance with the provisions of this article. Such complaint shall be regarded as evidence in any inquest that may be held on any employe dying from injuries received in the mine.

Section 7. It shall be the duty of the inspector whenever he has reason to believe that an illuminant is used or sold in violation of the provisions of this act to take samples of the same and have them tested under the directions of the Chief of the Department of Mines.

Section 8. The inspector shall make the following reports to the Chief on blank forms provided for that purpose: Not later than the tenth of each month he shall make a report of all fatal and serious non-fatal accidents as reported to him by the several foremen during the preceding month, stating the date, nature and cause of each accident and placing the responsibility therefor, together with the name, age, occupation and nationality of each person killed or injured, and whether married or single, and the number of widows and orphans left, which report shall be recorded and filed in the Department of Mines and included or a synopsis of the same in the annual report of said Department. Not later than the sixth day of each month he shall make a report giving the name of the operator and the name and location of each mine inspected during the preceding month, with dates of inspection, condition of mine, quantity of air in circulation at all points required by this article or as required by the Chief and the number employed in each split of air. Not later than the twentieth of February of each year he shall make an annual report to the Chief which shall recapitulate the duties performed by him during the preceding year and briefly describe the conditions of the mines relative to ventilation, drainage and general sanitary conditions as relating to the health, safety and welfare of the employes, and which shall also contain such suggestions or information of importance as he may deem necessary or as may be required by the Chief.

## ARTICLE XI

### Discretionary Powers of Inspectors

#### Arbitration

Section 1. The inspector shall exercise sound discretion in the performance of his duties under the provisions of this act and if the operator, superintendent or mine foreman shall be dissatisfied with any decision the inspector has given in the discharge of his duties, which shall be in writing, it shall be the duty of the dissatisfied person to appeal from said decision to the Chief of the Department of Mines, who shall at once direct two or more other inspectors to accompany promptly the inspector of the district to make further examination into the matter in dispute. If the said inspectors shall agree with the decision of the inspector of the district, their decision shall be final, unless the dissatisfied person shall within seven (7) days of the receipt of the decision of the committee of inspectors appeal therefrom to the court of quarter sessions of the county in which said mine is situated.



Section 2. Whereupon the court or a judge thereof in chambers shall forthwith appoint a commission of four practical, reputable and competent persons, two of whom shall be recommended by the superintendent and two by the Chief, and the four (4) persons thus recommended shall name a fifth person equally qualified and the five persons so named (none of whom shall be in the employ of the operator, operating company or any of its officers or of the Department of Mines) shall constitute a commission to investigate and report on the matter in dispute. Provided, however, in case any or all of said four (4) persons are not recommended by a writing filed in said court within seven days after the appeal is filed then the said court or a judge thereof in chambers shall forthwith fill the vacancy or vacancies by the appointment of a person or persons of equal qualifications. Should the four persons thus chosen not agree in writing upon the fifth person of this commission within five days after they have received notice of their appointment then the said court shall appoint the said fifth person on this commission. The duty of said commission of five persons shall be, under the instructions of the court, to forthwith examine said mine or a portion thereof and report under oath within ten days after their appointment the facts as they exist and the conditions pertaining thereto, and, based upon such conditions and facts, the decision of a majority on the matter in dispute, and their report and decision thereto shall be final and conclusive, unless exceptions thereto shall be filed by the operator or superintendent or by the Chief within seven days of the filing of said commission's report. If exceptions are filed, the court shall at once hear and, upon testimony taken thereon, determine them, and enter a decree in accordance with such determination: Provided, that the superintendent or the Chief shall thereafter have the right to have the record and proceedings removed to the supreme court for review by appeal or writ of error.

Section 3. If said court of quarter sessions sustains the decision of the committee of inspectors, and said court's decree is not appealed from, or if on appeal the supreme court finally sustains the decision of the inspector, then the appellant from said decision of the inspectors shall pay all costs of such proceedings; but if said court of quarter sessions or the supreme court shall not sustain the decision of the committee of inspectors, then all costs shall be paid by the Commonwealth: Provided, however that any and all appeals from any decision made by the committee of inspectors or made by the committee appointed by the court of quarter sessions shall not operate as a supersedeas to such decision during the pendency of such appeal either to the court of quarter sessions or the supreme court, unless so ordered by the court of quarter sessions or the appellate court or any judge thereof either by general rule or special order upon such terms as may be required by the court or judge granting the order or supersedeas.

## ARTICLE XII

### Neglect or Malfeasance of Inspector

Section 1. The court of common pleas in any county or district, upon a petition signed by not less than fifteen reputable citizens, who shall be mine workers or operators of mines, and with the affidavits of five or more of said petitioners attached, setting forth that

any inspector is neglectful of or is incompetent to perform the duties of his office or that he is guilty of malfeasance in office, shall issue a citation in the name of the Commonwealth to the said inspector to appear on not less than fifteen days' notice given in the same manner as summonses are now by law required to be served, upon a day fixed before said court, at which time the court shall proceed to inquire into and investigate the allegations of the said petitioners: Provided, however, that the citation shall not issue until the petitioners shall file a bond in said court in the name of the Commonwealth, in such sum as the court may direct and with sufficient sureties to be approved by the court, conditioned that the petitioners shall pay all costs of the proceedings in case the charges are not sustained.

Section 2. If the court finds that the said inspector is neglectful of or is incompetent to perform the duties of his office or that he is guilty of malfeasance in office, the court shall certify the same to the Governor who shall declare the office of said inspector vacant and proceed in compliance with the provisions of this act to fill the vacancy.

The costs of said investigation shall, if the charges are sustained, be imposed upon the inspector; but if the charges are not sustained they shall be imposed upon the petitioners.

## ARTICLE XIII

### Inspection Districts

Section 1. Under this act the anthracite region of the Commonwealth shall be arranged by the Chief of the Department of Mines into twenty-five (25) inspection districts and it shall be the duty of the Chief to assign the inspectors to their respective districts. He shall also designate their places of abode at points convenient to the mines under their charge.

Section 2. With the consent of the Governor, the Chief may at any time re-arrange the districts and add to the number of inspectors, if in his judgment the same should be increased.

## ARTICLE XIV

### Ventilation

Section 1. The minimum quantity of air provided shall not be less than two hundred cubic feet per minute for each person employed in the mine and shall be as much more as may be required by the inspector.

Section 2. The ventilation shall be conducted to and along the face of every working place in the mine in sufficient quantities to dilute, render harmless and carry away smoke and noxious and dangerous gases to such an extent that all the working places and roadways shall be kept continually in a healthful and safe condition for the employes who work and travel therein.

Section 3. All worked out or abandoned portions of a mine in operation, so far as practicable, shall be kept free of dangerous bodies of gas or water, but if found impracticable the inspector must be immediately notified.

Section 4. Every mine where more than seventy-five persons are employed shall be divided into two or more districts. Each district shall be provided with a separate split of pure air and the ventilation shall be so arranged that not more than seventy-five persons shall be employed at the same time in any one split. The return air from each split shall be conducted through an overcast or an undercast when necessary, which shall lead into a main return airway. The inlet and return airways of every district shall be separated by a pillar of coal or rock, where practicable; otherwise with a wall of concrete, stone or brick, laid in cement or lime mortar, not less than sixteen inches in thickness.

Section 5. All cross-headings connecting the inlet and outlet airways of every district, when closed permanently, shall be substantially closed with walls of concrete or of stone or brick laid in cement or lime mortar or with other suitable material, approved in writing by the inspector. Cross-headings between rooms, except those nearest the face, shall be closed and a brattice shall be erected from the last cross-heading through which the air enters so as to conduct the air to the face. Provided, that the closing of such headings and the erection of brattice may be omitted on the written consent of the inspector.

Section 6. All doors used for guiding and directing the ventilating current shall be so hung and adjusted as to close automatically.

Section 7. Every main door, (that is, the door that controls the air currents in each split) or the door the opening of which would short circuit the air between the intake and the return of any split, shall have an attendant whose constant duty shall be to open and close the same for transportation or travel, to prevent it from standing open any longer than is necessary for persons, animals or cars to pass through, unless a self-acting door is used which is approved by the inspector. A hole for shelter shall be made at each door where an attendant is employed. Provided, that the space is less than five feet from the body of the cars to the rib.

Section 8. All main doors shall be so placed that when one door is open another which has the same effect upon the air current shall remain closed and thus prevent any temporary stoppage of the ventilation; but if the inspector is of the opinion that an extra main door is necessary, he shall notify the mine foreman in writing to that effect and such door shall be erected forthwith and left standing open and out of reach of accidents from runaway cars and so fixed that it can be at once closed in the event of accident to the main door in use. The frame work of all main doors shall be substantially secured with concrete or with stone or brick laid in cement or lime mortar.

Section 9. Every permanent overcast or undercast shall be substantially built of incombustible material and of such strength as the circumstances may require. Provided, that this section shall not apply to overcasts or undercasts in use prior to the passage of this act, unless in the opinion of the inspector the same are a menace to the lives of the persons employed in the mine.

Section 10. All permanent ventilators shall be erected on surface. Provided, that this shall not be so construed as to prevent the erection of a temporary ventilating machine inside of the mine. All such permanent machinery built for such ventilation shall be kept



continually in operation at the speed established by the mine foreman and said ventilating apparatus shall not be stopped except upon his written consent.

Section 11. Every ventilator in operation at a mine shall be provided with a recording instrument by which the speed of the ventilator or the ventilating pressure for each hour of every day is indicated, with the date thereof, and such record shall be preserved in the mine foreman's office for a period of one year for future reference.

Section 12. All air passages shall be of sufficient area to allow for the circulation of not less than two hundred cubic feet of air per minute for every person working therein, and in no case in mines liberating explosive gas which can be detected by an approved safety lamp shall the velocity exceed four hundred and fifty (450) lineal feet per minute in any opening through which the air current passes, if safety lamps are used, except in the main inlet or outlet airways.

Section 13. It shall not be lawful to use a furnace for the purpose of ventilating any mine wherein explosive gas is being generated.

Section 14. Every person who shall neglect or fail to comply with any of the provisions of this article shall be deemed guilty of an offense against this act.

## ARTICLE XV

### Signalling Apparatus

#### Hoisting Machinery, Ropes and Safety Catches

Section 1. In every shaft or slope wherein men are being lowered or hoisted, the owner, operator or superintendent shall install and maintain in good condition a signal apparatus, so that conversation may be held and understood between the employes at the top and at the bottom and vice versa and also at any intermediate lift thereof. The same provision shall apply to inside planes where coal is lowered and employes have to travel therein.

Section 2. In mines liberating explosive gas, telephone connections shall be made from the surface to each lift or main centers of the mine, and telephone connections shall be made in any other mine when ordered in writing by the inspector.

Section 3. Every carriage used for lowering or hoisting employes in shafts shall be provided with guard rails at the sides and with chains, bar or gate at the ends and with sufficient covering overhead to protect the employes thereon, and with suitable overhead holds, and each carriage shall also be provided with efficient safety catches which shall be tested once every two (2) months and a record of each test shall be sent to the superintendent and also recorded in a book kept at the mine foreman's office for that purpose.

Section 4. All shafts shall be provided with safety gates at the top and intermediate landings, the top gates to be controlled by the carriages where practicable.

Section 5. All ropes shall be securely attached to the shaft of the drum of every engine that is being used for lowering or hoisting employes into and out of the mine, and the flanges of said drum shall have a clearance of not less than two inches when the whole of the rope is wound thereon, and no less than two full turns of the rope shall always remain on the drum. An adequate brake shall be attached to the drum where men are being lowered or hoisted, and an

indicator shall be attached to the hoisting apparatus to show the position of the carriages, cages or cars in the shaft or slope, and an efficient device to prevent overwinding shall be attached to every engine used for lowering or hoisting employes, if required in writing by the inspector.

Section 6. The main coupling chain attached to the socket of the wire rope of every shaft or slope shall be made of the best quality of steel or iron, and bridle chains of the same material shall be fastened to the top cross-piece of the carriage and attached to the rope not less than three feet above the socket.

Section 7. In shafts or slopes where coal is hoisted and employes lowered or hoisted, the ropes, links and chains shall be of ample strength with a factor of safety of not less than four to one of the maximum load. In shafts or slopes used exclusively for lowering or hoisting men and supplies the factor of safety shall not be less than eight to one of the maximum load or four to one of the maximum load of supplies. All such ropes, links, chains, safety catches, sockets and other hoisting apparatus shall be carefully examined at least once every working day by a competent person delegated for that purpose by the outside or inside foreman, and any defect therein found by which life and limb may be endangered shall be reported at once to the outside or inside foreman, who shall immediately proceed to remedy the defect, and until that is accomplished he shall prohibit the employes from being lowered or hoisted by the defective apparatus. The person making said examination shall keep a daily record of each inspection in a book kept for that purpose and the record shall be made out in ink.

Section 8. Every car, cage or gunboat used for lowering or hoisting employes in any slope shall be provided with a proper guard so constructed that employes while thereon shall be protected from anything that may roll down said slope.

Section 9. Every person who fails or neglects to comply with any of the provisions of this article shall be deemed guilty of an offense against this act.

## ARTICLE XVI

### Safety Lamps and Open Lights

Section 1. The use of open lights is prohibited in any gangway, airway, traveling-way or in any other working place where explosive gas is being liberated in such quantity as will indicate danger by an approved safety lamp or other approved device, also in pillar workings where a sudden inflow of explosive gas is likely to be encountered; and all such places shall be worked exclusively with locked safety lamps. The use of open lights is also prohibited in all working places, roadways or other portions of the mine through which explosive gas is carried in the air current in quantities indicating danger.

Section 2. When one section of a mine is worked by the use of locked safety lamps, while another section is worked by the use of open lights, the return air from the gaseous section shall be conducted directly into a return airway leading to the outlet. When a section of a mine is worked by the use of locked safety lamps, and other sections are worked by the use of open lights, it shall be the duty of



the mine foreman to provide a suitable danger station with danger signal or sign posted thereon, and employes using open lights shall not pass such danger signals or signs nor enter a section where locked safety lamps are in use.

Section 3. When safety lamps are used the position of the lamp station for lighting or relighting shall not be in the return air current.

Section 4. Whenever safety lamps are used by fire bosses or other persons they shall be so constructed that they may be safely carried against the air current ordinarily prevailing in that portion of the mine in which the lamps are used.

Section 5. All safety lamps used for examining mines or for working therein shall be the property of the owner or operator and shall be in the care of a competent person or persons appointed for that purpose, whose duty it shall be to clean, fill, trim, examine, light and deliver them in a safe condition to the men who are using safety lamps when entering the mine and to receive the lamps from the men when returning from work. Where locked safety lamps are required to be used they shall be locked before delivery to the men, unless permission be first given by the mine foreman to have the lamps used unlocked, and any person receiving a safety lamp shall see that it is clean and safe for use.

Section 6. At any mine liberating explosive gas in sufficient quantity to be detected by an approved safety lamp a sufficient number of safety lamps, not less than one-fourth of the number of safety lamps in use, shall be provided by the owner, operator or superintendent, as a surplus, and kept in a convenient place and in good condition for use in case of emergency.

Section 7. It shall be the duty of every person who knows that his safety lamp has been injured or is defective to extinguish the light at once and return the lamp immediately to the person who has charge of such safety lamps.

Section 8. Any person who neglects or fails to comply with any of the provisions of this article shall be deemed guilty of an offense against this act, and any person using a safety lamp who shall without authority make an alteration thereto or commit intentional damage to the same while in his possession shall likewise be guilty of an offense against this act.

## ARTICLE XVII

### Shafts, Slopes, Openings and Outlets

Section 1. It shall not be lawful for the superintendent or mine foreman to employ any person to work in a mine, unless there are at least two openings, inlet and outlet, from every seam of coal actually worked and available from every lift thereof, and such openings and outlets shall have distinct means of ingress and egress available at all times for the use of the employes. The distance between shafts shall not be less than one hundred and fifty feet. The distance between inlet and outlet of a slope must not be less than one hundred and fifty feet on the surface, but the distance between said openings inside shall not be less than sixty feet: Provided, that such distance between said openings shall apply only to mines opened after the passage of this act: And provided further, that the distance specified may be less with the written consent of the inspector. The passageways between said two shafts or slopes shall at all times be maintained in safe and

available condition for the employes to travel therein, and the pillars between said shafts or said slopes shall not be removed without the consent of the inspector, given in writing, to the mine foreman. The foregoing requirements shall not apply to the openings of a new mine or to the openings of a new lift of a mine that is being worked for the purpose of making connection between said two outlets, provided, that not more than twenty persons are employed at any one time in making such connection or driving the second opening, nor shall said requirements apply to any mine in which the second opening has been rendered unavailable by reason of the final removal of pillars, provided, that not more than twenty persons are employed therein at any one time.

Section 2. The cage or carriage or other safe means of egress shall be available at all times for the persons employed in any mine that has no available second outlet.

Section 3. There shall be at the bottom of every shaft where employes and material are lowered and hoisted (and similarly at any intermediate point where it intersects any lift) a passageway not less than five feet high and three feet wide, in the clear, which passageway shall be either cut through the solid strata or constructed of masonry and shall be kept open at all times so as to enable persons to pass around said shaft in going from one side thereof to the other.

Section 4. The escapements, shafts or slopes shall be fitted with safe and available appliances by which the persons employed in the mine may readily escape in case an accident occurs deranging the hoisting machinery at the main outlets.

Section 5. In slopes where the angle of inclination is fifteen degrees or less there must be provided a separate traveling way which shall be maintained in a safe condition for travel and kept free from steam, dangerous and noxious gases.

Section 6. No inflammable structure other than a frame to sustain pulleys or sheaves shall be erected over the entrance of any shaft or slope connecting the surface with the underground workings of any mine, and no inflammable structure shall be erected within one hundred feet of any such entrance; Provided, further, that breakers or other inflammable structures for the preparation of coal shall not be erected within two hundred feet of any such entrance. But this section shall not be construed to prohibit the erection of a fan drift for the purpose of ventilation, or of a trestle for the transportation of cars from any shaft or slope to such breaker or structure; neither shall it apply to any shaft or slope, until the work of development and shipment of coal has commenced. Where breakers are now erected over shafts or slopes, fire doors to be approved by the Department of Mines shall be so installed in same as to prevent the passage of smoke or fire from said structure into the mine, and where intake cannot be otherwise provided a lateral airway shall be so arranged that when said fire doors are closed air may enter the shaft or slope through such airway below the fire doors from a point not less than two hundred feet distant from the same.

Section 7. One year after the passage of this act, if in the opinion of the inspector such precaution is necessary, the sides, roof and bottom of every slope, airway, travelingway and every other opening to the surface, except cave-ins, shall be made incombustible for at least twenty-five feet from the mouth, and all cave-ins as far as practicable shall be so secured that fire from the surface cannot enter

the mine. The work shall be done to the satisfaction of the inspector. Provided, however, that an extension of time not to exceed sixty days may be granted by the Chief of the Department of Mines on the recommendation of the inspector in writing.

Section 8. The top of each shaft and also of each slope, where the angle of inclination is forty-five degrees or more or any intermediate lift thereof, shall be securely fenced off by railing or by vertical or flat gates.

Section 9. Every abandoned slope, shaft, air-hole or drift shall be properly fenced around or across its entrance and said fencing shall be maintained.

Section 10. All underground entrances to any places not in actual course of working or extension shall be properly fenced across the whole width of such entrances so as to prevent persons from entering the same.

Section 11. Every person, firm or corporation failing or neglecting to comply with, or who violates, any of the provisions of this article shall be deemed guilty of an offense against this act.

## ARTICLE XVIII

### Sinking of Shafts

Section 1. The owner, operator, superintendent or contractor shall erect over every shaft that is being sunk or shall hereafter be sunk, a safe and substantial structure to sustain sheaves or pulleys, ropes and loads, at a height of not less than twenty feet above the tipping place; and the top of such shaft and landing platform shall be so arranged that no material can fall into the shaft while the bucket is being emptied. Said structure shall be erected as soon as a substantial foundation is obtained, and in no case shall a shaft be sunk to a depth of more than fifty feet without such structure.

Section 2. If provisions are made to land the bucket on a truck, it shall be so constructed that material cannot fall into the shaft.

Section 3. Rock and coal from shafts while being sunk shall not be hoisted, except in a basket or on a cage, and said bucket or cage must be connected with the rope by a safety hook clevis or other safe attachment. The rope shall be securely fastened to the shaft of the drum and not less than three coils of rope shall always remain on the same. If said shafts are one hundred feet or more in depth they shall be provided with guides and guide attachments, applied in such manner as to prevent the bucket from swinging while being lowered or hoisted, and such attachments shall be maintained at a distance of not more than seventy-five feet from the bottom.

Section 4. An efficient brake shall be attached to every drum of an engine used for sinking shafts, and all machinery, ropes and chains connected therewith shall be examined once every day.

Section 5. Where the strata are not safe every shaft shall be cased lined or otherwise made secure.

Section 6. The following rules shall be observed as far as practicable in every shaft to which this article applies:

First. After each and every blast the chargeman must see that all loose material is swept down from the timbers before the workmen descend to their work.



Second. After a suspension of work, and also after firing a blast in a shaft where explosive gases are evolved, the person in charge must have the said shaft examined and tested with a safety lamp before the workmen are allowed to descend.

Third. Not more than four persons shall be lowered or hoisted in any shaft on a bucket at the same time, and no person shall ride on a loaded bucket.

Fourth. Whenever men are employed on platforms in shafts, the person in charge must see that the said platforms are properly and safely constructed.

Fifth. While shafts are being sunk all blasts therein must be exploded by electricity.

Section 7. Every person, firm or corporation who fails to comply with or who violates any of the provisions of this article shall be deemed guilty of an offense against this act.

## ARTICLE XIX

### Openings for Drainage, Et Cetera, on Other Lands

Section 1. The owner, operator or superintendent of any mine to which there is only one shaft, slope or outlet, may petition the court of common pleas in and for the county in which such mine is situated, which said court is hereby empowered to act in the premises, setting forth that in consequence of intervening lands between the working of his mine and the most practicable point, or the only practicable point, as the case may be, at which to make or bring to the surface from the working of his mine, he is unable to make an additional shaft, slope or outlet in accordance with the requirements of this act; whereupon the court may make an order of reference and appoint three (3) disinterested persons, residents of the county, viewers, one or more of whom shall be a practical mining engineer, all of whom, after being sworn in a faithful discharge of their duties, shall view and examine the premises and determine as to whether the owner should have the privilege of making an additional outlet through or upon any intervening lands, as the case may require, and report in writing to the court, which report shall be entered and filed of record. If the finding of the viewers or any two of them is in favor of the owner of such coal mine or colliery, he may make an additional shaft, slope or outlet under, through or upon intervening lands, as may be determined upon and provided for by the award. If the finding of the viewers is against the owner, or if no award be made by reason of any default or neglect on the part of the owner, he shall be bound to comply with the provisions of this act in the same manner as if this section had not been enacted. In case the said owner, operator or superintendent desires to and claims that he ought to make an additional opening under, through or upon any adjoining or intervening lands, to meet the requirements of this act for the ingress and egress of the men employed in his or their mine, he or they shall make a statement of the facts in the petition, with a survey setting forth the point of commencement and the point of termination of the proposed outlet which he or they, their engineers, agents or employes may enter upon said intervening lands and survey and mark as he or they shall find it proper for such additional outlet doing as little damage

as possible to the property explored, and the viewers shall state in their report what damage will be sustained by the owner or owners of the intervening lands by the opening, constructing and using of the outlet; and if the report is not appealed from it shall be confirmed or rejected by said court as to right and justice shall appertain, and any further and all proceedings in relation thereto shall be in conformity with like proceedings as in the case of a lateral railroad across or under intervening lands under the act in relation to lateral railroads, approved the fifth day of May, Anno Domini one thousand eight hundred and thirty-two, and the supplements thereto, so far as the provisions of the same are applicable thereto, and the notices to the owner of intervening lands of the intention to apply for the privilege of making an outlet, and meeting of the viewers, shall be given, and the costs of the case shall be paid as provided in the said act of fifth May Anno Domini one thousand eight hundred and thirty-two and the supplements thereto.

## ARTICLE XX

### Boundary Pillars

Section 1. It shall be obligatory on the land owners and operators to leave a pillar of coal in each seam worked along the lines of adjoining mines or properties of such width, taken in connection with the pillar to be left by the land owner or operator of an adjoining property, that will be a sufficient barrier to safeguard life and property in case the mine or mines of either property should be filled with water or endangered from any other cause.

Section 2. Whenever a gangway, airway, breast or any other opening in a mine has reached within three hundred feet of any boundary line of any adjoining mine or property, it shall be the duty of the mine foreman to suspend work in said opening until the width of the pillar necessary to safeguard life and property shall have been decided upon, and he shall notify the inspector whose duty it shall be to look into the matter and with the engineers of both properties shall forthwith decide the width of the pillar required.

Section 3. If the inspector and said engineers shall fail to agree on the width of said pillar the matter in dispute shall be referred to the Chief of the Department of Mines, and if he is not able to amicably settle the dispute he shall select three (3) disinterested engineers, who shall decide upon the width of said pillar, and their decision shall be final. The cost of the investigations made by the three engineers so selected shall be paid jointly by said land owners and operators.

Section 4. If at any time a barrier pillar as provided for in the previous section of this article should have fully served its purpose and shall no longer be necessary in the interest of safety the same may be removed, if upon petition of the adjoining operator to the mine inspector of the district the board that established such pillar or a new board selected for the purpose shall give its approval in writing for the removal of said pillar.

Section 5. Any land owner or operator who shall fail or neglect to comply fully with the provisions of this article shall be deemed



guilty of an offense against this act, and in addition thereto shall be liable to the operator or owner of the adjoining property in a sum equivalent to treble the value of the coal mined beyond the boundary line established in accordance with the provisions of this article, said sum to be recovered with costs of suit by action of trespass and no prosecution by indictment under this act shall be a bar to such action.

Section 6. Any owner or operator who fails to comply with any of the provisions of this article shall be deemed guilty of an offense against this act.

## ARTICLE XXI

### Use of Electricity

#### Definitions

Section 1. The definitions of terms contained herein shall be as follows:

Potential. The terms "Potential" and Voltage" are synonymous and mean electrical pressure.

Difference of Potential. The term "Difference of Potential" means the difference of electrical pressure existing between any two points of an electrical system or between any point of such system and the earth as determined by a voltmeter.

Potential of a Circuit. The potential or voltage of a circuit machine or any piece of electrical apparatus is the potential normally existing between the conductors of such circuit or the terminals of such machine or apparatus.

A. Where the conditions of supply of electricity are such that normally the difference of the potential between any points in the circuit does not exceed three hundred twenty-five (325) volts the supply shall be deemed a low voltage.

B. Where the conditions of supply of electricity are such that the difference of potential between any two points in the circuit may at any time exceed low voltage, but normally does not exceed six hundred fifty (650) volts, the supply shall be deemed medium voltage.

C. Where the conditions of the supply of electricity are such that the difference of potential between any two points in the circuit at any time exceeds medium voltage the supply shall be deemed a high voltage.

Grounding. Grounding any part of an electric system shall consist in so connecting such part to the earth as will insure at all times a proper path for the immediate discharge of electrical energy.

Explosion or flame-proof casings or enclosures are those which when completely filled with a mixture of methane and air and the same exploded are capable of either entirely confining the products of such explosion within the casing or of so discharging them from the casing that they cannot ignite a mixture of methane and air combined in the preparation most sensitive to ignition and entirely surrounding the points of discharge and in most intimate proximity therewith.

Underground Stations. An underground station is herein considered as any place where electrical machinery including transformers is permanently installed.

## SPECIAL RULES

## General

Section 2. The following rules relating to the installation and use of electricity in mines shall be observed as far as is practicable:

1. All electrical apparatus and conductors shall be sufficient in power and size and of proper design for the work they may be called upon to do, sufficiently protected, efficiently covered and safe-guarded, and so installed, worked and maintained as to reduce danger from accidental shock or fire to the minimum, and shall be of such construction and so worked that the rise in temperature caused by ordinary working will not injure the insulating materials.

2. No higher voltage than medium voltage shall be used underground except for transmission or for application to transformers or other apparatus in which the whole of the high voltage circuit is stationary.

3. When high voltage cables are taken into the mine and unless they are mechanically protected they shall be taken through a bore hole suitable for the purpose or through a shaft or slope where no employes are lowered or hoisted therein, or through a tunnel drift or gangway where no employes travel into an underground station, from which point low or medium voltage may be conveyed. All high voltage circuit cables or conductors shall be properly insulated.

4. In gaseous mines high voltage transmission cables shall be installed in the intake airways only and high voltage motors and transformers shall be installed only in underground stations ventilated by the intake air which has not passed through or by a gaseous district.

## Precaution against Shock

5. Gloves or mats of rubber or other suitable insulating material shall be provided and used by persons so engaged when repairs are made to the live parts of any electrical apparatus or when the live parts of electrical apparatus have to be handled for the purpose of adjustment.

6. At every colliery where electricity is used below ground for power there shall be available a competent electrician who shall have full charge of the electrical apparatus in the mine, but who shall be subject to the authority of the mine foreman.

7. Instructions shall be posted in every generating transforming and motor room and at the entrance to the mine, containing directions as to the restoration of persons suffering from electrical shock, and all employes working in connection with electrical apparatus shall be familiar with and know how to carry out these instructions.

8. In the event of a breakdown or of damage or injury to any portion of the electrical equipment in a mine or of overheating or of the appearance of sparks or arcs outside of enclosing casings, or in the event of any portion of the equipment not a part of the electrical circuit becoming alive, every such occurrence shall be promptly reported to the mine foreman.

## Underground Stations

9. In underground stations where switchboards are installed there shall be a passageway in front of the switchboard not less than three (3) feet in the clear.

When medium voltage is used, insulating floors or mats shall be provided where live metal work is on the front of the board.

When high voltage is used, there shall be no live metal work on the front of the main switchboard within seven (7) feet of the floor or platform, and the space back of the board shall be kept locked up, but the lock shall allow of the door being opened from the inside without the use of a key; and the floor back of the board shall be made of incombustible material.

10. No person other than one authorized by the mine foreman shall enter an underground station or interfere with the working of an apparatus connected therewith.

11. Fire buckets filled with clean dry sand or other standard extinguishers for electrical fires shall be kept in underground stations ready for immediate use in extinguishing fires.

### Transmission Circuits and Conductors

12. Medium or low pressure conductors may be bare except in gaseous portions of the mine.

13. Every branch power circuit shall be provided at the point where it leaves the main circuit with a switch of not less than one hundred (100) ampere capacity on each pole.

14. In underground roads the trolley wires shall be installed as far to one side of the passageway as is practicable and securely supported on insulated hangers and placed at such intervals that the sag between points of support shall not exceed three (3) inches. The sag between points of support can exceed three (3) inches if the height of the trolley wire shows the rail is five (5) feet or more and does not touch the roof when the trolley passes under it.

15. All other wires, except telephone, shot firing and signal wires, shall be on the same side of the road as the trolley where practicable.

16. All landings and partings where men are required to regularly work or pass under trolley or other bare power wires which are placed less than six and one-half ( $6\frac{1}{2}$ ) feet above top of rail a suitable protection shall be provided. This protection may consist of channeling the roof, placing boards along the wires, which shall extend below them, or the use of other approved devices that afford protection.

17. All underground power wires and cables in hoisting shaft or manway compartments shall be highly insulated and substantially fixed in position. Shaft cables not capable of sustaining their own weight shall be properly supported at intervals according to the weight of the cables. Where the cables are not completely boxed in and protected from falling material space shall be left between them and the sides of the shaft so that they may yield when struck and thus lessen the blow given by the falling material.

18. Where the cables or feed wires, other than trolley wires, in main haulage roads cannot be kept at least twelve (12) inches from any part of the mine car or locomotive they shall where practicable be specially protected by guards.

19. When main or other roads are being repaired or blasting is being carried on, suitable temporary protection from damage shall be given the cables.



20. Trailing cables for portable machines shall be specially flexible, heavily insulated and protected with extra stout braiding hose pipe or other equally effective covering.

21. Each trailing cable in use shall be daily examined by the machine operator for abrasions and other defects, and he shall also be required to carefully observe the trailing cable while in use and shall at once report any defect to the mine foreman.

22. In the event of the trailing cable in service breaking down or becoming damaged in any way, or of its inflicting a shock upon any person, it shall be at once put out of service. The faulty cable shall not again be used until it has been repaired and tested by a properly authorized person.

23. In gaseous portions of mines a fixed terminal box shall be provided at the points where trailing cables are attached to the power supply. This terminal box shall be flame proof and shall contain a switch and fuse on each pole of the circuit. The switch shall be so arranged that it can only be operated from without the box when the latter is completely closed, and the switch shall also be so constructed that the trailing cables cannot be detached or removed when the switch is closed.

### Switches, Fuses and Circuit Breakers

24. All points at which a circuit, other than a signal circuit, have to be made or broken, shall be provided with proper switches. The use of hooks or other make-shifts is prohibited, except that connection for gathering locomotives, or locomotives and machines used in driving headings or rooms, may be made to the trolley by means of suitable hooks. Switches shall be so installed that they cannot be closed by gravity. In any gaseous portion of a mine switches, circuit breakers or fuses shall not be of the open type, but shall be enclosed in explosion-proof casings or break under oil.

### Motors

25. In any gaseous portion of a mine where gas is likely to be encountered, all stationary motors, unless placed in such rooms as are separately ventilated with intake air, shall have all their current carrying parts, also their starters, terminals and connections, completely enclosed in explosion-proof enclosures made of non-inflammable material. These enclosures shall not be opened except by an authorized person and then only when the power is switched off. The power shall not be switched on while the enclosures are open.

26. Motors used for operating fans in non-gaseous mines where they are so situated that they are not under constant supervision of a competent man shall be totally enclosed, (not necessarily explosion proof) unless placed in a chamber or passageway completely lined with incombustible material and the chamber or passageway itself free from combustible material.

27. In working places where gas is likely to be encountered a safety lamp or other suitable apparatus for the detection of explosive gas shall be provided for use with each machine when working, and should any indication of explosive gas appear on the flame of the safety lamp or other apparatus used for the detection thereof, the person in charge shall immediately stop the machine, cut off the current at the nearest switch and report the matter to the mine foreman.

28. No man shall be placed in charge of a coal cutting machine in any gaseous portion of a mine who is not a competent person capable of determining the safety of the roof and sides of the working place and detecting the presence of explosive gas.

29. In any gaseous portion of a mine a coal cutting machine shall not be brought within the last break-through next the working face until the machine man shall have made an inspection for gas in the place where the machine is to work, unless such examination is then made by some other competent person authorized or appointed for that purpose by the mine foreman. If any explosive gas is found in the place the machine shall not be taken in.

30. No coal cutting machine shall be continued in operation in a gaseous portion of a mine for a longer period than half an hour without an examination as above described being made for gas, and if gas is found the current shall at once be switched off the machine and the trailing cable shall forthwith be disconnected from the power supply.

31. The person finding gas shall at once report the fact to the fire boss or mine foreman and the machine shall not again be started in such place until the fire boss or a person duly authorized by the mine foreman has examined it and pronounced it safe.

32. The person in charge of a coal cutting machine or drilling machine shall not leave the machine while it is working, and shall before leaving the working place see that the current is cut off from the trailing cables.

33. In any gaseous portion of a mine if an electric sparking or arc be produced outside of coal cutting or other portable motor, or by the cable or rails, the machine shall be stopped and not be worked until the defect is repaired, and the occurrence shall be reported to the mine foreman.

### Electric Locomotives

34. Electric haulage by locomotives operated from a trolley wire is not permissible in any gaseous portion of mines, except in the intake air fresh from the outside.

35. In no case shall the potential used in the trolley system be higher than medium voltage.

36. Storage battery locomotives shall be used in gaseous mines only when the boxes containing the cells and all electrical parts are enclosed in flame and explosion-proof casings.

### Electric Lighting

37. Arc lamps shall not be used in gaseous mines, except under conditions where trolley locomotives are allowable.

38. If arc lamps are used in the mines, they shall be of the enclosed arc type.

39. In all mines the sockets of fixed incandescent lamps shall be of the so-called "weather proof" type the exterior of which shall be entirely non-metallic. Flexible lamp connections are prohibited except for portable lamps as hereinafter provided.

40. In any gaseous portion of a mine, except where ventilated by fresh intake air, incandescent lamps shall be protected by gas-tight



fittings of strong glass; except that lamps of two hundred and twenty (220) volts or higher and of not more than eight (8) candle power and without tips need not be so protected.

41. Incandescent lamps shall be so placed that they cannot come in contact with combustible material.

42. Portable incandescent lamps, other than battery lamps, shall not be used, except in connection with the repair and inspection of machines and equipment, and then only in non-gaseous portions of mines. When so used they shall be protected by a heavy wire cage completely enclosing both lamp and socket and shall be provided with a handle to which both cage and socket are firmly attached and through which the leading-in wires are carried.

43. Electric lamps shall be replaced by a competent person only, and in gaseous portions of a mine only after an examination for gas has been made with a safety lamp.

### Shot Firing by Electricity

44. Electricity from any grounded circuit shall not be used for shot firing.

45. When shot firing cables or wires are used in the vicinity of power or lighting conductors, special precaution shall be taken to prevent the shot firing cables or wires from coming in contact with the light power or any other circuit.

46. Any miner or any person who has the necessary training and skill and who has been properly instructed in the work and duly authorized by the mine foreman shall be allowed to fire shots electrically in any mine.

47. Portable shot firing machines, sometimes called generators, shall be enclosed in a tightly constructed case when employed in any portion of the mine. All contacts when made or broken shall be within the case, except that the binding posts for making connections to the firing leads may be outside.

48. All portable devices for generating or supplying electricity for shot firing when in a mine shall be in charge of the person firing the shots.

49. No firing machine or battery shall be connected to the shot firing leads until all other taps preparatory to the firing of shot have been completed and all persons have moved to a place of safety.

50. Immediately after the firing of a shot the firing lead shall be disconnected from the supply or source of electricity and no person shall approach a shot which has failed to explode until the firing leads have been so disconnected from the device and an interval of five (5) minutes has elapsed since the last attempt to fire the shot.

### Electric Signalling

51. All proper precautions shall be taken to prevent electric signal and telephone wires from coming into contact with other electrical conductors whether insulated or not.

52. Bells, wires, insulators, contact-makers and other apparatus used in connection with electric signalling underground shall be of

suitable design of substantial and reliable construction and erected in such manner as to reduce the liability of failure or false signals to a minimum.

53. In any gaseous portion of a mine the potential used for signaling purposes shall not exceed twenty-four (24) volts, and bare wires shall not be used for signal circuits except in haulage roads.

### Electric Relighting of Safety Lamps

54. If in any place or portion of a mine in which safety lamps are used they are relighted underground by electricity the mine foreman shall select a suitable station or stations not being in the return airway and where there is not likely to be any accumulation of inflammable gas, and no electric relighting apparatus shall be used in any other place. All electric relighting apparatus shall be securely locked and shall not be available for use, except by persons authorized by the mine foreman to relight safety lamps, and such persons shall examine all safety lamps brought for relighting before they are re-issued.

Any person who neglects or fails to comply with any of the provisions of the foregoing rules or who shall wilfully damage or without authority alter or make connections to any portion of a mine electrical system shall be guilty of an offense against this act.

## ARTICLE XXII

### Inspection by or in behalf of employes

Section 1. The employes of every mine may at their own expense appoint two of their number who are practical miners, with not less than five years' experience, to inspect the mine where an accident has occurred, of which notice is required under this act to be given, and shall be allowed to go together with any person acting as legal adviser to the employes, or with a mining or electrical engineer selected by said employes accompanied as aforesaid, to the place where the accident occurred, and to make such inspection as may be necessary for ascertaining the cause of the accident; subject, however, to the provisions of this act requiring the place where the accident has occurred to be left as it was immediately after the accident.

Section 2. Every facility shall be afforded by the mine foreman and all persons employed in the mine for the purpose of the inspection, and if the mine foreman or any other person refuses or neglects to afford such facilities as aforesaid he shall be deemed guilty of an offense against this act.

## ARTICLE XXIII

### Miners' Examining Board

Section 1. Hereafter no person whosoever shall be employed or engaged in the anthracite coal region of this Commonwealth as a miner in any anthracite coal mine, without having obtained a certificate of competency and qualification so to do from the "Miners' Examining Board" of the proper district and having been duly registered as herein provided.

Section 2. That there shall be established in each of the inspection districts in the anthracite coal region a board to be styled the "Miners' Examining Board of the . . . . . District" to consist of three miners, who shall be appointed in the manner hereinafter set forth from among the most skilful miners actually engaged in said business in their respective districts, and who must have had five years' practical experience in the same. The said persons so appointed shall each serve for a term of two years from the date upon which their appointment takes effect, and they shall be appointed upon or before the expiration of the term of the present members of the "Miners' Examining Board," and they shall be and constitute the "Miners' Examining Board" for their respective districts and shall hold the office for the term for which they were appointed or until their successors are duly appointed and qualified and shall receive as compensation for their services three (\$3.00) dollars per day for each day actually engaged in this service and all legitimate and necessary expenses incurred in attending the meetings of said board, under the provisions of this act and no part of the salary of said board or expenses thereof shall be paid out of the State Treasury.

Each of said boards shall organize by electing one of their members president and one member as secretary.

Every member of said board shall, within ten days of their appointment or being apprised of the same, take and subscribe an oath or affirmation before a properly qualified officer of the county in which they reside that they will faithfully and impartially discharge the duties of their office.

Any vacancies occurring in said board shall be filled in the manner herein provided from among such only as are eligible for original appointment.

Section 3. Each of said examining boards shall designate some convenient place within their district for their meetings, of which due notice shall be given by advertisement in two or more newspapers of the proper county, and so divided as to reach as nearly as practicable all the mining districts therein, but in no case shall such meeting be held in a building where any intoxicating liquors are sold.

Each of said committee shall open at the designated place of meeting a book of registration in which shall be registered the name and address of each and every person duly qualified under this act to be employed as a miner in an anthracite coal mine. And it shall be the duty of all persons employed as miners to be properly registered, and in case of a removal from the district in which a miner is registered it shall be his duty to be registered in the district to which he removes.

Application for registration only may be sent by mail to the board, after being properly attested before any person authorized to administer an oath or affirmation in the county in which the applicant resides. The form of application shall be subject to such regulation as may be prescribed by the boards, but in no case shall any applicant be put to any unnecessary expense in order to secure registration.

Section 4. Each applicant for examination and registration and for the certificate hereinafter provided shall pay a fee of one (\$1.00) dollar to the said board, and a fee of twenty-five (25) cents shall be charged for registering any person who shall have been examined and registered by any other board, and the amount derived from this



source shall be held by said board and applied to the expenses and salaries herein provided and such as may arise under the provisions of this act, and the said board shall report annually to the court of common pleas of their respective counties and the Department of Mines all moneys received and disbursed under the provisions of this act, together with the number of miners examined and registered under this act and the number who failed to pass the required examination.

Section 5. It shall be the duty of each of the said boards to meet once every month, and not oftener, and said meeting shall be public, and if necessary the meeting shall be continued to cover whatever portion may be required of a period of three days in succession, and examine under oath all persons who shall desire to be employed as miners in their respective districts; and said board shall grant such persons as may be qualified certificates of competency or qualification which shall entitle the holder thereof to be employed as and to do the work of miners, as may be expressed in said certificate, and such certificates shall be good and sufficient evidence of registration and competency under this act, and the holder thereof shall be entitled to be registered without an examination in any other of the anthracite districts upon the payment of the fee herein provided.

Persons applying for a certificate of competency entitling them to be employed as miners shall not be less than twenty-one years of age and have had at least two years' experience as a miner, miner's laborer or man of general work, in the coal mines of this country or of other countries, and in no case shall an applicant be deemed competent unless he appear in person before the said examining board to answer twelve questions in the English language pertaining to the requirements of a practical miner. He shall demonstrate that he understands the use of safety lamps, knows how to handle explosives and is competent to do the work of a miner without endangering his own life or the lives of others. The said board shall keep an accurate record of the proceedings of all its meetings and in said record shall show a correct detailed account of the examination of each applicant with the questions asked and their answers, and at each of its meetings the board shall keep said record open for public inspection. Any miner's certificate granted under the provisions of this act and any prior acts shall not be transferable to any person or persons whatsoever, and any transfer of the same shall be deemed a violation of this act. Certificates shall be issued only at meetings of said board and said certificate shall not be legal unless then and there signed by at least three members of said board.

Section 6. No person shall hereafter engage as a miner in any anthracite coal mine without having obtained such certificate as aforesaid. And no person shall employ any person as a miner who does not hold such certificate as aforesaid, and no mine foreman or superintendent shall permit or suffer any person to be employed under him or in the mines under his charge and supervision as a miner who does not hold such certificate. Any person or persons who shall violate or fail to comply with the provisions of this act shall be guilty of a misdemeanor and on conviction thereof shall be sentenced to pay a fine of not less than one hundred (\$100.00) dollars and not to exceed five hundred (\$500.00) dollars or shall undergo imprisonment for a term not less than thirty days and not to exceed six months, or either or both, at the discretion of the court.



Section 7. For the purpose of examination of applicants for certificates as aforesaid a board of examiners shall be appointed immediately after the passage of this act in each of the inspection districts by the judges of the Court of Lackawanna County for all inspection districts wholly or the greater part in the counties of Lackawanna, Sullivan, Susquehanna and Wayne; by the judges of the court of Luzerne County for all inspection districts wholly or the greater part in the counties of Luzerne and Carbon, and by the judges of the court of Schuylkill County for all inspection districts wholly or the greater part in the counties of Schuylkill, Northumberland, Columbia and Dauphin. The board so appointed shall hold office until December thirty-one, one thousand nine hundred and fourteen. And the respective courts shall on the tenth day of January one thousand nine hundred and fifteen and every two (2) years thereafter appoint the aforesaid board of examiners.

Section 8. Nothing in this act shall be construed to in any way, excepting as herein provided, affect miners' certificates which have been lawfully issued.

Section 9. It shall be the duty of the several Miners' Examining Boards to investigate all complaints or charges of non-compliance or violation of the provisions of this act and to prosecute all persons so offending, and upon their failure so to do then it shall become the duty of the district attorney of the county wherein the complaints or charges are made to investigate the same and prosecute all persons so offending, and it shall at all times be the duty of the district attorney to prosecute such members of the Miners' Examining Board as have failed to perform their duty under the provisions of this act; but nothing herein contained shall prevent any citizen, a resident of the Commonwealth, from prosecuting any person or persons violating this act, with power to employ private counsel to assist in the prosecution of the same. Upon conviction of any member of the Miners' Examining Board for any violation of this act, in addition to the penalties herein provided, his office shall be declared vacant and he shall be deemed ineligible to act as a member of the said board.

Section 10. For the purpose of this act the members of the said "Miners' Examining Board" shall have power to administer oaths.

## ARTICLE XXIV

### Duties of Miner

Section 1. No miner shall fire a blast in any mine or in any portion of a mine where locked safety lamps are used, except by permission of the mine foreman or assistant mine foreman, but before such blast is fired the person in charge shall examine the place and adjoining places and satisfy himself that it is safe to fire such blast before such permission is given.

Section 2. A miner whether using black powder, high explosives or permissible explosives shall tamp the hole complete to the mouth irrespective of whether it is fired by electricity, fuse or squib, and in charging the hole he shall only use one kind of explosive.

Section 3. A miner who is preparing to explode a blast by the use of a fuse shall at all times cut the fuse of sufficient length that it shall

protrude at least six inches outside of the hole, and that said fuse shall be lighted at the extreme end so as to give the miner ample time to reach a place of safety.

Section 4. No miner while charging holes for blasting coal, slate or rock shall use an iron or steel tamping bar, unless the end is tipped with at least six inches of copper or other soft metal; nor shall he force a tight cartridge into any hole.

Section 5. A miner who is about to explode a blast by the use of a patent squib shall not shorten the match, nor saturate it with oil, nor turn it down when placed in a hole, nor ignite it except at its extreme end, nor do anything to shorten the time the match will burn.

Section 6. A miner who is about to fire a blast shall be careful to notify all persons who may be in danger therefrom, and shall give sufficient alarm before and after igniting the same so that any person or persons who may be approaching shall be warned of the danger.

Section 7. A miner who ignites a feeder of gas by a blast or otherwise shall immediately extinguish it, if possible. If he is unable to do so, he shall at once notify the mine foreman, assistant mine foreman or fire boss. The miner immediately before leaving his working place shall see that no gas blowers are left burning.

Section 8. No miner shall withdraw a charge of any explosive from a hole that has misfired, nor shall he reopen the same; but a new hole shall be drilled at a distance of not less than two feet from the old hole and fired.

Section 9. Any miner having charge of a working place shall keep the roof and sides thereof properly secured by timber or otherwise, so as to prevent such roof and sides from falling, and he shall not do any work nor permit any work to be done under loose or dangerous material, except for the purpose of securing the same.

He shall order props, cap-pieces and timbers necessary at least one day in advance of needing them, as provided for in the rules of the mine. If he fails to receive the same and finds his place becoming unsafe he shall vacate it until the necessary timbers are supplied.

Section 10. A miner working a breast or any other place shall, before commencing work and also after the firing of every blast, enter said breast or place to examine and ascertain its conditions, and his laborer or assistant shall not go to the face of said breast or place until the miner has examined it and found it to be safe.

Section 11. No miner shall remove any props or timbers that are supporting the roof or sides, except it shall be done by blasting or by some other safe method.

Section 12. Any miner who has gunpowder or other explosive, shall keep it in a wooden or metallic box securely locked and at least ten (10) feet from the tracks where space at that distance is available.

Section 13. A miner when opening a box containing explosives, or when handling the same, shall first place his lamp at a distance of not less than five (5) feet therefrom and in such position that the air current cannot convey sparks to the explosives, and he shall not approach with a lighted lamp, pipe or any other thing containing fire nearer than five feet to an open box containing the same.

Section 14. Any miner who fails or neglects to comply with or who violates any of the provisions of this article shall be deemed guilty of an offense against this act.

## ARTICLE XXV

## Emergency Hospital

Section 1. After the passage of this act it shall be unlawful to operate any mine where twenty or more persons are employed inside, unless said mine is provided with a sufficient quantity of linseed oil or picric acid, gauze, bandages, splints and wooden and waterproof blankets. Said articles shall be stored in a room to be known as the emergency hospital, erected at a convenient place in the mine or on the surface at the discretion of the inspector, which shall not be less than eight by twelve feet and sufficiently furnished, lighted, kept clean and properly ventilated so that medical treatment may be given therein promptly to injured employes.

Section 2. It shall be the duty of the mine foreman, assistant mine foreman or fire boss, in case of a serious personal injury to an employe from any cause, to at once visit the scene of accident, see that the injured is properly cared for, wrapped in woolen blankets and removed to the emergency hospital and then so treated as will add to the comfort and ease of the patient. Immediately thereafter the injured shall be wrapped up and sent to the surface and taken to his home or to a hospital. The mine foreman shall keep a book showing the required articles on hand, name of the person injured, nature of injury, treatment and by whom treated at time of accident.

Section 3. The neglect or refusal to perform the duties required by this article by any person required to perform them, or the violation of any of the requirements hereof, shall be deemed an offense against this act.

## ARTICLE XXVI

## Rescue and First Aid Corps

Section 1. The operator of every colliery shall organize and maintain a competent first aid corps and rescue corps at said colliery, recruited from volunteers among the employes.

Section 2. Each first aid corps and each rescue corps shall consist of five robust and intelligent employes of the colliery, properly trained by those in charge of the work.

Section 3. Portable breathing apparatus, electrical safety lamps and other appliances, sufficient for the purpose for which they are intended, shall be maintained in good working condition.

Section 4. A company operating two or more collieries may establish a central station, if the collieries are located in a group, and connected by telephone or telegraph. At every central station where two or more collieries are so connected there shall be kept and maintained not less than six rescue helmets, with oxygen tanks attached, also a sufficient supply of oxygen to enable the helmets to be in constant use for a period of twenty four hours. There shall be further provided sufficient electric lamps, resuscitating apparatus and other appliances necessary in rescue work. Facilities shall be provided to promptly transport the equipment from the central station to the collieries.

Section 5. The superintendent shall adopt such rules and regulations for the conduct and guidance of the men employed in first aid and rescue work as may appear best for the good of the service.



Section 6. Any superintendent who fails to comply with any of the provisions of this article shall be deemed guilty of an offense against this act.

## ARTICLE XXVII

### Ambulances and Stretchers

Section 1. The owner, operator or superintendent of every mine at which twenty or more persons are employed inside shall provide and keep in good condition at the principal entrance to the mine, or such other place as the superintendent and inspector may determine and designate, one ambulance and at least two stretchers for conveying to their places of abode persons who may be injured while in the discharge of their duties, and he shall also provide and keep in good condition a sufficient supply of woolen and water-proof blankets. Provided further, that when two or more mines are located within one mile of each other, or when the ambulance is lodged within one mile of each mine, only one such conveyance shall be required, if such mines have ready and quick means of intercommunication by telephone or telegraph. Provided further, that two stretchers are kept in readiness at all times at small mines where less than twenty persons are employed therein.

Section 2. The ambulance shall be constructed upon good substantial easy springs, covered and closed, with windows on the sides or end and provided with spring mattresses or other comfortable bedding placed on roller frames, together with sufficient covering and protection for the convenient movement of the injured. It shall be of sufficient size to convey at least two injured persons and two attendants at one time and shall be provided with seats for the same. The stretchers shall be constructed of such material and in such a manner as to insure ease and comfort in the carriage of the injured persons.

Section 3. Whenever an employe in or about a mine shall receive an injury as to render him unable to walk to his place of abode, the superintendent shall immediately have him conveyed thereto or to a hospital as the case may require.

Section 4. If the conditions are such that the person injured can be conveyed to his home or to the hospital more conveniently and more quickly by railroad, trolley road or otherwise, such mode shall be permitted, but in such cases the conveyance must be under cover and the comfort of the injured person must be provided for.

Section 5. Any superintendent who fails or neglects to carry out the provisions of this article shall be deemed guilty of an offense against this act.

## ARTICLE XXVIII

### Regulations for Explosives and Detonators

Section 1. No black powder, high explosives or permissible explosives shall be stored in a mine, and not more than twenty-five pounds of either shall be taken into any mine at one time by any person, unless more is required for one shift.

Section 2. Black powder, high explosives, permissible explosives or detonators shall not be hauled on any electric motor trip in any mine, unless the same are encased in non-conductive boxes or receptacles.



Section 3. High or permissible explosives shall not be sold for use in mines, unless the name of the manufacturer and name and grade of explosive are stamped on each stick and the method of handling and full instructions for use are conspicuously displayed on and in the original box or package containing the same.

Section 4. Detonators shall at all times be kept separate and apart from other explosives until required for use.

Section 5. Black powder, high explosives or permissible explosives, stored for daily use at a colliery, shall be in separate buildings which shall be built of incombustible material and rifle bullet proof. Detonators must be kept in an annex which must also be fireproof. No open light shall be permitted in either building. These buildings shall be erected at least two hundred and fifty feet from shafts, slopes and breakers and boiler houses where persons are employed.

Section 6. Buildings where high explosives or permissible explosives are stored for daily use shall be heated by steam or hot water and kept at a temperature as directed by the manufacturer and no frozen explosives shall be sold to any employe nor distributed to or used by any employe.

Section 7. Black powder, high explosives, permissible explosives and detonators shall be handled with care and used in accordance with the printed instructions issued by the manufacturer.

Section 8. No person shall thaw any explosive inside or outside the mines, except by the method recommended by the manufacturer.

Section 9. Any person, firm or corporation who fails or neglects to comply with any of the provisions of this article shall be deemed guilty of an offense against this act.

## ARTICLE XXIX

### Weight of Black Powder

Section 1. After the passage of this act every keg of black blasting powder manufactured, which is sold or used in and about any mine, shall contain twenty-five pounds each, half keg shall contain twelve and one-half pounds each, quarter keg shall contain six and one-quarter pounds, all of standard weight. Every keg shall be plainly stamped with the name of the person, firm or corporation manufacturing said powder and also the number of pounds it contains.

Section 2. No person, firm or corporation except only such person, firm or corporation whose name is stamped or inscribed on a keg shall be allowed to refill the same with black powder.

Section. 3. Any manufacturer or dealer, person, firm or corporation violating any of the provisions of sections one and two of this article, and any superintendent who buys or any person who offers for sale, any black powder contrary to the provisions of this article shall be deemed guilty of an offense against this act.

## ARTICLE XXX

### Regulations for Oil

Section 1. The oiling and greasing of cars inside of a mine are strictly prohibited, unless the place where said oil or grease is used

is thoroughly cleaned once every day to prevent the accumulation of oil or grease on the roads or in the drains at that point. Not more than one barrel of lubricating oil shall be permitted in any mine at one time and the same shall be kept in a fire proof building of masonry or concrete of sufficient thickness to insure safety, or cut out of the solid rock.

Section 2. No explosive oil shall be taken into or used in any mine for lighting purposes, except when used in safety lamps and shall not be stored in any mine in quantities exceeding five gallons. Said oil when stored in a mine shall be kept in a fireproof vault of concrete or masonry with fire proof doors which shall be kept locked when not in use.

Section 3. All oils used in open lamps shall be non-explosive and free from odor and fumes deleterious to health and shall have a burning point not lower than three hundred degrees. When acetylene lamps are used the quantity of carbide taken into the mine by each man shall be limited to such quantity as may be necessary for his daily use.

Section 4. Paraffine wax for use in a mine shall not contain over three per centum of oil.

Section 5. All illuminants sold for use in open lamps in mines shall have branded conspicuously on the barrel or receptacle containing the same the name of the manufacturer and date of shipment.

Section 6. An employe who shall use, and any mine foreman who shall permit, or persons who shall sell for use in a mine, oil or other material for illuminating purposes other than that prescribed by this article shall be deemed guilty of an offense against this act.

## ARTICLE XXXI

### Code of Signals

Section 1. In all shafts and slopes where persons, coal and material are to be hoisted by machinery the following code shall be used:

(A) One rap or whistle to hoist coal or material.

(B) One rap or whistle to stop car, carriage, cage or gunboat when in motion.

(C) Two raps or whistles to lower car, carriage, cage or gunboat.

(D) Three raps or whistles to hoist persons. The engineer shall signal back when ready, after which the persons shall get on the car, carriage, cage or gunboat and then one rap or whistle shall be given the engineer to hoist.

## ARTICLE XXXII

### BOILERS AND CONNECTIONS

#### Examinations and Reports

Section 1. All boilers used for generating steam about mines or collieries shall be kept in safe condition, and the superintendent or outside foreman shall have them examined by a qualified person at least once in six months, and oftener if necessary. The result of such examination under oath shall be certified in writing to the inspector within thirty days thereafter.

Section 2. It shall not be lawful hereafter to place a boiler for the purpose of generating steam nearer than one hundred feet to any breaker or other structure used in the preparation of coal.

Section 3. Each nest of boilers shall be provided with a safety valve of sufficient area for the steam to escape and with weights or springs properly adjusted.

Section 4. Steam gauges shall be properly connected with the boilers to indicate the steam pressure, and a steam gauge shall be attached to the main steam pipe in the boiler house and placed in such a position that the fireman in charge can readily see what pressure is being carried. Such steam gauges shall be kept in good working order, tested and adjusted on every general inspection and so reported to the inspector.

Section 5. Any person who fails or neglects to comply with any of the provisions of this article shall be deemed guilty of an offense against this act.

### ARTICLE XXXIII

#### Inside Stables and Buildings.

Section 1. It shall not be lawful to provide a stable for a horse or mule inside a mine, unless space for said stable is excavated in solid strata of rock, slate or coal. If excavated in the coal seam, a wall shall be built of brick, stone or concrete not less than eight inches in thickness along the face of the coal from the bottom slate to the roof, or cased in entirely with incombustible material. In the construction of said stable wood or other combustible material shall not be used except for a floor where the animals shall stand upon.

Section 2. No hay or straw shall be taken into any mine, unless pressed and made into compact bales which shall be kept in a store house apart from the stable and built in the same manner as the stable. Under no circumstances shall the hay be stored in the stable. No open lights shall be permitted to be used in any stable, store house or at any other place in the mine where hay and straw are handled.

Section 3. The air current used for the ventilation of a stable shall not be intermixed with the air current used for ventilating any other portion of the mine.

Section 4. That all buildings inside a mine including engine houses, pump houses and all other buildings and shanties shall be built of incombustible material which shall be approved in writing by the inspector.

Section 5. Any foreman who fails or neglects to comply with any of the provisions of this article shall be deemed guilty of an offense against this act.

### ARTICLE XXXIV

#### Wash Houses

Section 1. It shall be the duty of the owner, operator or superintendent of each colliery, at the request in writing of ten or more persons employed, to provide a suitable building, which shall be convenient to the principal entrance, for the use of the persons employed and for the purpose of washing and changing their clothes when entering and returning therefrom. The said building shall be maintained in good order and in a healthful and sanitary condition,



properly lighted, heated and supplied with pure cold and hot water, and with proper facilities for the employes to wash. Any superintendent who shall fail or neglect to comply with the provisions of this article or any person who shall maliciously injure or destroy or cause to be injured or destroyed the said building or part thereof, or any of the appliances or fittings used for supplying light, heat and water therein, or do any act tending to the injury or destruction thereof, he or they shall be deemed guilty of an offense against this act.

## ARTICLE XXXV

### Employment of Minors

Section 1. No minor under fourteen years of age and no female of any age (except a female fourteen years or over may be employed in a colliery office at clerical work) shall be employed, permitted or suffered to work in or about or for any outside operations of any mine or colliery, and no minor under the age of sixteen years and no female of any age shall be employed, permitted or suffered to work inside any mine.

Section 2. Before any minor under the age of sixteen years shall be permitted to work in or about the outside operations of any mine or colliery, the employer of said minor shall procure and keep on file (which file shall be at all times accessible to the inspector) an employment certificate, as required by the laws of this Commonwealth, issued to said minor. A complete list of all such minors under the age of sixteen employed at said colliery shall be kept on file at the mine foreman's office. The employment certificate shall nevertheless remain the property of the minor and such minor shall be entitled to a surrender of said certificate to him or her by the employer whenever said minor shall leave the service of any employer holding said certificate.

Section 3. Any inspector may make written demand upon any superintendent or outside foreman, if said minor is employed outside the mine as being fourteen years and not more than sixteen, or upon any mine foreman, if said minor is employed in a mine as being sixteen years or over, and it shall appear to said inspector that any such minor is under the required age for employment that such superintendent, outside foreman or mine foreman as the case may be shall either furnish him within ten days with the same evidence that such minor is in fact of the proper age as is required for the issuance of an employment certificate, or, failing so to do, shall cease to employ or permit such minor to work. In case any such superintendent, outside foreman or mine-foreman shall fail to furnish to said inspector within ten days after written demand the required evidence of age, and shall thereafter continue to employ such minor or permit him to work, proof of the making of such demand, failure to produce the evidence required and continuing such minor in his employ, shall be prima facie evidence of the illegal employment of such minor in any prosecution brought therefor.

Section 4. Any superintendent, outside foreman or mine foreman who shall employ any minor contrary to or in violation of any of the provisions of this article shall be deemed guilty of an offense against this act.



## ARTICLE XXXVI

## Checking System

Section 1. At every mine where more than two hundred persons are employed inside, a check system shall be adopted whereby each person before being allowed to enter the mine shall show his check and number to the headman, whose duty shall be to prevent any person from entering such mine unless qualified with such check, and upon the return from the mine shall deposit his check with an official or in a place designated by the mine foreman.

Section 2. If any checks are not returned within the period of two hours after the end of a regular day's work, said official shall immediately notify the mine foreman of the fact, whose duty it shall be at once to make an investigation and discover the cause.

Section 3. Said check system shall be of uniform design and on a form approved by the Chief of the Department of Mines.

Section 4. Any superintendent or other person who neglects to comply with the provisions of this article shall be deemed guilty of an offense against this act.

## ARTICLE XXXVII

## SPECIAL RULES

## Duties of Hoisting Engineer

Rule 1. The engineer in charge of an engine by which persons are lowered into and hoisted out of a mine shall be a sober and competent person of not less than twenty-one years of age.

Rule 2. He shall operate his engine with great care and in such manner that the cage, carriage or gunboat shall not exceed an average speed of one thousand (1000) feet per minute in shafts, and in slopes at such speed as the inspector may designate, when any person is being lowered or hoisted in shafts or slopes. No person shall interfere with him while in the discharge of his duties.

Rule 3. The engineer who has charge of the hoisting machinery by which persons are lowered into and hoisted out of a mine shall be in constant attendance for that purpose during the whole time any person is below ground, and he shall not allow any person (except such as may be designated by the foreman in charge) to run said engine, nor shall he allow any one to interfere with any part of the machinery.

Rule 4. No person engaged as a hoisting engineer, part of whose duties it is to lower men and boys into and hoist them and coal or rock from the mines, shall be so employed for a longer period than eight (8) hours out of each day of twenty-four (24) hours.

Rule 5. In any shaft or slope where the engine has been standing idle for one hour or more an empty trip shall be hoisted as a precautionary measure before any person shall be permitted to ride thereon.

## Duties of Fireman

Rule 6. The fireman in charge of a boiler or boilers for the generating of steam at any colliery shall keep constant watch over the same and shall see that the steam pressure does not at any time

exceed the limit allowed by the outside foreman or the superintendent. He shall frequently try the safety valves and shall not increase the weight thereon and shall maintain a proper depth of water in each boiler, and if anything should happen to prevent this he shall notify without delay the foreman in charge and take such other action as may under the particular circumstances be necessary for the protection of life and preservation of property.

### Duties of Headman

Rule 7. A headman who shall be designated by the outside foreman at every shaft or slope where persons are lowered or hoisted in any mine, shall be at his proper place from the time persons begin to descend until all persons that may be at the bottom of the shaft or slope when quitting work at the end of the shift shall be hoisted. He shall personally attend to the signals and see that the provisions of this act in respect to the lowering of persons into shafts or slopes are complied with.

Rule 8. He shall inform the engineer by signal or otherwise when any person is about to descend a shaft or slope and the engineer shall return the signal before starting the engine. In the absence of the headman outside of working hours a person about to descend shall give and receive the signals in the same manner.

Rule 9. He shall not allow any tools to be placed on the same cage with persons who are being lowered except that the same are laid flat on the bottom of the carriage.

Rule 10. The headman of a shaft, slope or plane shall be careful to see that all safety blocks or other devices to prevent runaway cars from entering the same are properly closed when necessary and in no case left open when persons are riding therein. The said safety blocks or other devices shall not be withdrawn until the cars on top of the slope or plane are coupled to the rope or chain and the proper signal given.

Rule 11. The headman of a shaft shall see that the fans or keeps for the cage to rest upon are properly operated, and also see that no material is liable to fall down such shaft which can be prevented.

Rule 12. The headman shall report to the outside foreman any violation of general rule fourteen of this act.

### Duties of Footman

Rule 13. A footman shall be designated by the mine foreman for every shaft or slope where persons are hoisted, who shall be at his proper place from the time that persons begin to descend until all the persons that may be at the bottom of the shaft or slope when quitting work at the end of the shift shall be hoisted. He shall personally attend to the signals and see that the provisions of this act in respect to the hoisting of persons out of shafts or slopes are complied with.

Rule 14. He shall inform the engineer by signal or otherwise when any person is about to ascend a shaft or slope, and the engineer shall return the signal before starting the engine. In the absence of the footman outside of working hours the person about to ascend shall give and receive the signals in the same manner.

Rule 15. He shall not allow any tools to be placed on the same carriage with persons who are being hoisted except the same are laid flat on the bottom of the carriage.

Rule 16. The footman shall report to the mine foreman any violation of general rule fourteen of this act.

### Duties of Furnaceman

Rule 17. The furnaceman shall attend to his duties with regularity and he shall at all times keep a clear brisk fire which must not be smothered with coal or slack during working hours, and he shall not allow ashes to accumulate excessively on or under the bars or in the approaches to the furnace, and said ashes shall be cooled before being removed.

### Duties of Fan Engineer

Rule 18. The engineer in charge of a ventilating fan shall keep it running at such speed as the mine foreman shall direct in writing. He shall report promptly to the mine foreman or an assistant mine foreman any great change in the pressure gauge or any other serious defect. In case of an accident to the machinery he shall immediately notify the mine foreman or an assistant mine foreman. If only ordinary repairs are needed he shall await the instructions of the mine foreman or an assistant mine foreman before stopping the fan, but if it becomes necessary to stop it to prevent its destruction, he shall forthwith notify the superintendent or mine foreman who shall immediately give warning to the persons in the mine.

### Duties of Motorman or Locomotive Engineer

Rule 19. The motorman or locomotive engineer shall keep a sharp lookout ahead and sound the whistle or alarm bell frequently when coming near cross-over switches or branches and shall not exceed the speed of six miles per hour.

Rule 20. The motorman shall see that the motor cables and controlling parts are kept clean and in a safe working condition and that the head light is burning when the motor is in motion. He shall not allow any person, except those delegated by the mine foreman, to ride on the motor or loaded cars.

### Duties of Driver

Rule 21. When a driver has occasion to leave his trip he must be careful to see that it is left when possible in a safe place and where it will not endanger the drivers of other trips, and must take care while taking his trip down grade to have the brakes or sprags so adjusted that the same is kept under control. He shall not leave any cars standing where they materially obstruct the ventilation, unless in case of an accident which he shall promptly report to the mine foreman or an assistant mine foreman, and he shall not allow any person to ride on loaded cars nor to drive his horses or mules.



Any hoisting fan or locomotive engineer, fireman, headman, footman, furnaceman, motorman, driver or any other person who fails or neglects to comply with or who violates any of the provisions of the foregoing rules shall be deemed guilty of an offense against this act.

## ARTICLE XXXVIII

### GENERAL RULES

Rule 1. No unauthorized person shall have in his possession a key or any other contrivance for the purpose of unlocking safety lamps in a mine where locked safety lamps are used; nor shall matches or other means for striking light be taken into such mines.

Rule 2. No person shall ride upon or against any loaded car, cage or gunboat in any shaft, slope or plane in or about any mine.

Rule 3. No driver or other person shall descend or ascend a shaft in company with a mule or horse.

Rule 4. Not more than ten (10) persons shall be hoisted or lowered at any one time in any shaft or slope, and whenever five persons shall arrive at the bottom of any shaft or slope in which persons are regularly hoisted or lowered they shall be furnished with an empty car or cage and be hoisted, except, however, in mines where there is provided a traveling way having an average pitch of fifteen (15) degrees or less and not more than one thousand (1000) feet in length. This however shall not prohibit the hoisting or lowering of twenty (20) persons at one time in slopes where two (2) or more loaded cars are regularly hoisted. Provided, that not less than thirty (30) workmen working therein make such a request in writing to the inspector of the district, and, if in his judgment the hoisting appliances in every respect are of sufficient strength, he may comply with the request of the workmen.

Provided, That in any coal mine or colliery where the hoisting appliances are not of sufficient strength to hoist or lower the number of persons named, he shall have the power to reduce the number of persons to be hoisted or lowered.

Rule 5. No gunpowder or other explosives shall be stored in a mine and no workman shall have at any one time in any one place more than twenty-five pounds, unless more is necessary for him to accomplish one day's work.

Rule 6. When high explosives are used in a mine, the manner of storing, keeping, moving, charging, firing or using shall be in accordance with special rules as furnished by and endorsed with the official signature of the manufacturer, and which shall also be approved by the superintendent in writing; and it shall not be lawful for any person to use any brand of explosives, defonators, caps, squibs or fuses, except upon the written approval of the superintendent.

Rule 7. No person who is not practical shall charge or fire a blast, unless he has given satisfactory evidence of his ability to do so with safety and has obtained permission from the mine foreman.

Rule 8. An accumulation of gas in mines shall not be removed by brushing where it is practicable to be removed by bratticing.

Rule 9. When a feeder of gas is ignited the person igniting the same



shall immediately extinguish it, if possible, but if unable to do so he shall notify the mine foreman, assistant mine foreman or fire boss of the fact at once.

Rule 10. When motors are used in any mine their speed shall not exceed six miles per hour, and an efficient alarm shall be provided and attached to the front end of the trip in the direction in which it is moving.

Rule 11. Motors propelled by steam shall not be used in any passageway which is also used as an intake airway in any mine where persons are employed, except upon the approval of the inspector in writing.

Rule 12. No person shall run cars out of any breast or on any gravity road, except he be a person employed by the mine foreman for that particular work.

Rule 13. No person shall travel on any gravity plane while cars are being hoisted or lowered thereon. Whenever five persons arrive at the top or the bottom of any plane on which it is necessary for men to travel, traffic thereon shall be suspended for a period of time long enough to permit them to reach the top or the bottom.

Rule 14. No person except the man giving the signal shall jump on a car, carriage or gunboat after the signal to start has been given, and if any person shall enter a car, carriage or gunboat in excess of the lawful number, the headman or footman, as the case may be, shall notify him of the fact and request him to get off, which request shall be immediately complied with. Any violation of this rule shall be reported promptly to the foreman in charge, who shall forthwith notify the inspector to that effect.

Rule 15. No person except employes shall be allowed to enter the mine without permission from the superintendent or mine foreman, and no person in a state of intoxication shall be allowed to go into any mine.

Rule 16. Every workman when first employed in a mine shall have his attention directed by the mine foreman to the special and general rules posted at the mine.

Rule 17. No safety lamp shall be entrusted to any person for use in a mine, until said person has given satisfactory evidence to the mine foreman that he understands the proper use thereof and the danger of tampering with the same.

Rule 18. Nothing in this act shall prevent a mine foreman from acting as an assistant mine foreman or fire boss in any mine, or an assistant mine foreman from acting as a fire boss.

Rule 19. No person shall go into an abandoned portion of a mine or into any other place that is not in actual course of working, without permission from the mine foreman; and no person shall travel to or from his work except by the traveling ways assigned for that purpose.

Rule 20. All persons are expressly forbidden to commit any nuisance, or throw into, deposit, or leave dirt, stones or other rubbish in any airway, so as to interfere with or pollute the air passing into and through the mine.

Rule 21. No person whatever shall remove any props or timbers that are supporting roof or sides, except it shall be done by blasting or by other safe method.

Rule 22. Any person who has gunpowder or any other explosives, shall keep it in a wooden or metallic box securely locked and at least ten (10) feet from the tracks in all cases where space at that distance is available.

Rule 23. Any person opening a box containing explosives or handling the same shall place his lamp at a distance of not less than five feet therefrom and in such position that the air current cannot convey sparks to the explosives, and he shall not approach with a lighted lamp, pipe or any other thing containing fire, nearer than five (5) feet to an open box containing the same.

Rule 24. Every passage way used by the employes in any mine and also used for the transportation of coal shall be made of sufficient width to permit employes to pass moving cars with safety, but if found impracticable to make such passageway of sufficient width, then safety holes of ample dimensions shall be made on one side of said passage way and not more than fifty yards apart. Such passageway and safety holes shall be level with the track, kept free from refuse, well drained, and the roof and sides shall be secure.

Rule 25. No person shall couple or uncouple cars while in motion. Provided, however, that this shall not apply to the top or bottom men of shafts, slopes or planes.

Rule 26. When cars are run on gravity roads by brakes or sprags, the runner only shall ride on the rear end of the last car, and when said cars are controlled by sprags, there shall be a space of not less than two and one-half feet from the body of the car to the rib and said space shall be made on one or both sides of the track. Provided, that this section shall not apply to gravity roads constructed prior to the passage of this act. Whenever it may be necessary for the runner or driver to pass moving cars said space shall be kept free from obstructions.

Rule 27. It shall not be lawful for a foreman of any mine to employ any person who is not competent to understand the regulations of any mine liberating explosive gas. Provided, that this rule shall not apply to a section of a mine that does not liberate such gas.

Rule 28. When a workman is about to fire a blast, he shall be careful to notify all persons who may be in danger therefrom, and shall give sufficient alarm before and after igniting the match or fuse, or, if the blast is fired by electricity, before the wires are connected, so that any person or persons approaching shall be warned of the danger.

Rule 29. Safety holes shall be made at the bottom of all slopes and planes and kept free from obstruction, to enable the footman to escape readily in case of danger.

Rule 30. A miner or other employe who shall discover anything wrong with the ventilating current or with the condition of the roof, side, timber or roadway, or with any other part of the mine in general, such as would lead him to suspect danger to himself or his fellow workmen or to the property of his employer, shall immediately report the same to the mine foreman or other person for the time being in charge of that portion of the mine.

Rule 31. Any superintendent or mine foreman who prevents the footman from giving an empty car, cage or gunboat, designated in a former rule, shall be deemed guilty of an offense against this act.

Rule 32. Any person who shall knowingly or wilfully damage, remove or render useless any danger signal, fencing, means of signaling, electric wires, apparatus, instrument, machine, or shall obstruct any airway, open a ventilating door and not have the same closed, enter a place in or about the mine against caution, carry fire, open lights or matches into places where locked safety lamps are in use, deface, pull down or destroy any notice required to be posted by this act, disturb any machinery or cars, or do any other act or thing whereby the lives or health of the employes or the safety of the property of the operator in or about a mine or colliery may be endangered, shall be deemed guilty of an offense against this act, and any person who fails to comply with any of the provisions of the foregoing rules shall be deemed guilty of an offense against this act.

## ARTICLE XXXIX

### Inquests

Section 1. Whenever a loss of life occurs in a mine or on the surface, it shall be the duty of the superintendent to forthwith give notice thereof by telegraph, telephone or special messenger, to the inspector and when death results from personal injury the superintendent shall, as heretofore provided, promptly notify the inspector.

Section 2. Whenever loss of life occurs or whenever the lives of the employes are endangered, the inspector shall visit the scene of the accident as soon as possible after being notified and offer such suggestions as in his judgment shall be necessary to safeguard the lives of the employes and the property of the operator.

Section 3. The condition of the place or the scene of a fatal accident shall not be disturbed or altered, except for the purpose of preventing loss of life or personal injury or for the repairing of damage that may affect safety in other parts of the mine, until the inspector has visited the scene and given permission to the mine foreman to do so.

Section 4. In case of death, and after a thorough examination, if the inspector is of the opinion that a coroner's inquest is necessary, he shall notify the coroner to hold such inquest without delay, and if no such inquest is called within twenty-four hours after giving the notice to the coroner, he shall make a fuller examination into the cause of such accident, and for this purpose he shall have power to compel the attendance of witnesses at such examination and to administer oaths or affirmations to persons testifying thereat. The inspector shall make a record of all such investigations which shall be preserved in his office. The cost of such investigation shall be paid by the county in which the accident occurred in like manner as costs of inquests held by the coroner or justice of the peace are now paid.

Section 5. An inquest held by the coroner shall be adjourned if the inspector is not present to watch the proceedings, and the coroner in such cases shall notify the inspector in writing of such adjournment, and the time and place of holding the same at least three days prior thereto, and at all such inquests the inspector shall have the right to examine and cross-examine witnesses.



Section 6. If at any such inquest the inspector be not present, and it is shown by the evidence given at the inquest that the accident was caused by neglect or by any defect in the mine or on the surface which in the judgment of the jury requires a remedy, the coroner shall send notice in writing to the inspector of such neglect or default.

Section 7. No person who is interested personally, or a person employed in the mine or on the surface when such accident has occurred, shall be qualified to serve on a jury or be empaneled on the inquest, and a constable or other officer shall not summon such a person so disqualified as a juror, but the coroner shall empanel a majority of the jurors from the miners who are qualified to judge of the nature of the accident.

Any person who fails to comply with any of the provisions of this article shall be deemed guilty of an offense against this act.

## ARTICLE XL

### LOCATION OF MINE AND JURISDICTION OF COURTS

#### Injunctions

Section 1. A mine is located within the meaning of the act in the county where the mouth or opening or the greater portion thereof is located, irrespective of the geographical location of the underground workings; and the courts of the county where the mouth or opening of such mine is situated shall have jurisdiction of all matters and questions arising under this act; and where a mine has two openings which are located in different counties the courts of such counties shall have concurrent jurisdiction.

Section 2. Upon application of the inspector in the name of the Commonwealth the court of the proper county or any judge thereof, whether any proceedings have or have not been taken, shall prohibit by injunction or otherwise the working of any mine or colliery in which any person is employed or is permitted to be for the purpose of working in contravention of the provisions of this act, and may award such costs in said injunction or other proceedings as the court or judge thereof may think proper. Provided, that this section shall be without prejudice to any other remedy permitted by law for enforcement of the provisions of this act. Written notice of the intention to apply for such injunction in respect to any mine or colliery shall be made to the owner, operator or superintendent of such mine or colliery not less than twenty-four hours before the application is made.

## ARTICLE XLI

### Records, Forms and Printed Matter

The Department of Mines shall furnish to the several examining boards and to the operator on application, and without cost, all forms, blanks, reports, record books and printed matter required by the provisions of this act.

## ARTICLE XLII

#### Penalties

Section 1. Any judge of the court of quarter sessions of the county in which the mine or colliery at which the offense, act or



omission, as hereinafter stated has occurred, is situated, is hereby authorized and required upon the presentation to him of the affidavit of the district attorney of the proper county, or upon the affidavit of any citizen of said county setting forth that the owner, operator or superintendent or any other person employed in or about such mine or colliery has been negligently guilty of an offense against the provisions of this act whereby a dangerous accident had resulted to any person or persons employed in such mine or colliery, to issue a warrant to the sheriff of said county directing him to cause such person or persons to be arrested and brought before said judge, who shall hear and determine the guilt or innocence of the person or persons so charged and if convicted he or they shall be sentenced to pay a fine not exceeding five hundred (\$500.00) dollars or an imprisonment in the county jail for a period not exceeding thirty days, or both, at the discretion of the court. Provided, that any defendant may waive trial before a judge, as herein provided, and at any time at or before the time of such trial demand a trial by a jury in the court of quarter sessions, in which case he may enter into a recognizance before said judge with such surety or sureties and in such sum as said judge may approve, conditioned for his appearance at the next court of quarter sessions to answer the charge against him and abide the order of the court in the premises, meanwhile to be of good behavior and keep peace, or in default of such recognizance to be committed to the county jail to await such trial.

Section 2. If any such person shall feel himself aggrieved by such conviction and sentence before a judge or a judge and jury, as aforesaid, he may appeal therefrom subject to the following conditions, namely, the appellant shall within seven days after the decree has been made give notice to the prosecutor of his intention to appeal and within the same time enter into a recognizance with such surety or sureties and in such sum as shall be approved by said judge, conditioned to appear and try such appeal before the next court of quarter sessions and to abide the judgment of the court thereon and to pay all such costs and penalties as may be there awarded, and upon the compliance with such conditions the judge shall release the appellant from custody pending the appeal.

Section 3. Nothing in this act shall prevent any person from being indicted or liable under any other act to any higher penalty or punishment than is herein provided, and if the court before whom any such proceeding is held shall be of the opinion that proceedings ought to be taken against such persons under any other act or otherwise, he may adjourn the case to enable such proceedings to be taken.

Section 4. All offenses under this act are declared to be misdemeanors and every person found guilty of an offense against this act shall be subject to a fine not exceeding five hundred (\$500.00) dollars or imprisonment in the jail of the proper county for a period not exceeding six months, or both, at the discretion of the court.

Any offense under this act committed by a corporation shall constitute a misdemeanor and upon conviction the offending corporation shall be subject to a fine of not more than one thousand (\$1,000.00) dollars, and its officers, directors or agents, or any of them, participating in such violation shall upon conviction be sentenced to pay a fine of not more than five hundred (\$500.00) dollars or undergo imprisonment in the county jail of the proper county for a period not exceeding six months, or both, at the discretion of the court.

Section 5. For any violation of duty by the mine inspector, prescribed in this act, he shall be deemed guilty of a misdemeanor and upon conviction be sentenced to pay a fine of not more than three hundred (\$300.00) dollars or to be imprisoned for a period not exceeding three (3) months, or either or both, at the discretion of the court.

Section 6. All fines imposed under this act shall be paid into the treasury of the county wherein the proceedings are had for the use of the county.

Section 7. No conviction or acquittal under this act in any complaint shall be received in evidence upon the trial of any action for damages arising from the negligence of any owner, operator or superintendent or employe in any mine or colliery.

Section 8. For any injury to person or property occasioned by any violation of this act, or any failure to comply with its provisions, by any owner, operator or superintendent of any mine or colliery, a right of action shall accrue to the party injured against said operator for any direct damages he may have sustained thereby, and in case of loss of life by reason of such neglect or failure aforesaid, a right of action shall accrue to the widow and lineal heirs of the person whose life shall be lost, for like recovery of damages for the injury they have sustained.

## ARTICLE XLIII

### Employers' Liability

Section 1. Nothing in this act shall be taken or construed to in any manner repeal by implication or otherwise an act entitled "An act extending and defining the liability of employers in actions for negligence, for injury or death of their employes, declaring what shall not be a defense in such actions by employes against their employers, and defining who are agents of the employer under this act," approved June ten, one thousand nine hundred and seven.

## ARTICLE XLIV

### Repeal

Section 1. All acts or parts thereof inconsistent herewith be and the same are hereby repealed.

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## WORK OF THE MINE INSPECTORS

During the year they spent 3,113½ days inspecting mines; 173 days inspecting machinery and plants; 437 days investigating accidents; 100 days attending inquests; 1,564½ at office work; 18½ days inspecting maps and plans; 497½ days in consultation on mining matters; 3 days on consultation on legal matters; 157 days traveling on duty; 75 days on sick list; 126 days legal holidays; 91½ days attending court; 35½ days at mine fires; 98 days on Mine Foremen's Examining Boards; 13 days attending Mining Congress; 32 days attending fu-

nerals; 4 days on account of deaths in families; 10 days sickness in families; 11 days on vacation; 33 days on private business; a total of 6,593 days, or about 314 days a year for each Inspector.

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## ACCIDENTS

The accident phase of the mining question receives more and more attention every year, in keeping with the general tendency of the times to look after the welfare of the wage earners. Everywhere there is manifest a spirit of genuine humanitarianism and sincere desire to render less dangerous and less irksome the various vocations of mankind.

Referring particularly to Pennsylvania and to her great mining industry, it may be said that the combined energies of the Department of Mines, the District Inspectors, the operators and the mine officials have been earnestly exerted in an effort to eliminate as far as possible the different causes of fatalities and to throw around the great army of employes every practical and sensible safeguard that experience can suggest and conditions may demand.

The operators, who have learned by experience that accidents not only cause criticism of the management, but also entail heavy damage loss, are always ready to add to their equipment any device or improvement that will make conditions safer. As the mines of Pennsylvania are now equipped and managed, the liability to accident is reduced to a minimum, except in the matter of personal carelessness and negligence. No equipment, however perfect and complete it may be, can prevent accidents from these causes. This fact is recognized by the operators, and in all mines the necessity for greater caution is constantly impressed upon the employes by printed rules and oral instructions.

If the accidents resulting from carelessness and disobedience of rules could be eliminated, the fatalities in the mines would not be greater than in many of the vocations in the cities.

The work of the coal miner becomes more dangerous as the operations grow more extensive and attain to greater depth. This has become apparent in recent years to mining officials and other persons interested in mining, and has created a demand for stricter and more modern legislation and for the adoption of the most approved means and methods for the protection of human life.

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## CAUSES AND LOCATION OF FATAL ACCIDENTS

The records for the year show that as usual the two principal causes of fatal accidents in the Anthracite mines were (1) falls of coal, slate and roof, and (2) cars. The total number of inside fatal accidents was 498 of which 246 or 49.40 per cent. were caused by falls of coal, slate and roof and 78 or 15.66 per cent. by cars. The other causes were explosions of gas, 35 or 7.03 per cent.; explosions



of powder and dynamite, 25 or 5.02 per cent.; electricity 5 or 1.01 per cent.; blasts 51 or 10.24 per cent.; falling into shafts, suffocation by gas and miscellaneous causes, 58 or 11.64 per cent.

The accidents by falls of coal occurred as follows: At face of workings, 47; at pillar work, 21; on gangways while timbering and repairing, 5; in chutes, 1; in crosscuts, 3; in airways, 1; a total of 78 or 31.71 per cent. By falls of slate at face of workings, 24; at pillar work, 5; on gangways while timbering and repairing, 7; back in chambers, 1; in chutes, 2; in old workings, 2; a total of 41 or 16.67 per cent. By falls of roof at face of workings, 99; at pillar work, 11; on gangways while timbering and repairing, 8; back in chambers, 3; in crosscut, 1; on slope, 2; on plane, 1; in sump, 1; in old workings, 1; a total of 127 or 51.62 per cent.

The total number of fatal accidents by falls of coal, slate and roof at face of working places was 170 or 69.11 per cent.; at pillar work, 37 or 15.04 per cent.; on gangways while timbering and repairing, 20 or 8.13 per cent.; in chutes, 3 or 1.22 per cent.; in crosscuts, 4 or 1.62 per cent.; in airways, 1 or .41 per cent.; back in chambers, 4 or 1.62 per cent.; in old workings, 3 or 1.22 per cent.; on slopes, 2 or .81 per cent.; on plane, 1 or .41 per cent.; in sump, 1 or .41 per cent.

78 persons were killed by cars, 55 of whom were killed on gangways, 15 on slopes, and 8 at other places.

46 persons were killed by explosions of blasts at face of workings and 5 persons by explosions of blasts at other places. Explosions of powder and dynamite on gangways and at other places killed 25 persons.

Of the accidents on the surface, 41 or 39.81 per cent. were caused by cars; 20 or 19.42 per cent. by machinery, and 42 or 40.77 per cent. by other causes.

The table submitted herewith shows the accidents in each inspection district by falls and other causes.

These reports show 160 miners killed by falls; 119 or 74.38 per cent. were killed at face of workings; 23 or 14.37 per cent. while removing pillars; 6 or 3.75 per cent. on gangways while timbering and repairing; 2 or 1.25 per cent. back in chambers; 3 or 1.87 per cent. in chutes; 2 or 1.25 per cent. in abandoned workings; 1 or .63 per cent. on planes; 3 or 1.87 per cent. in crosscuts; and 1 or .63 per cent. in airway. Of the 160 fatalities, 119 or 74.38 per cent. were due to the carelessness of the victims and 41 or 25.62 per cent. were unavoidable.

4 miners killed by mine cars on gangways. Of the 4 fatalities, 3 or 75 per cent. were due to the carelessness of the victims, and 1 or 25 per cent. was unavoidable.

21 miners killed by explosions of gas, 15 or 71.43 per cent. of whom were in chambers; 1 or 4.76 per cent. on manway; and 5 or 23.81 per cent. in old workings. Of the 21 fatalities, 18 or 85.71 per cent. were due to the carelessness of the victims and 3 or 14.29 per cent. to the carelessness of others.

12 miners were killed by powder and dynamite, 5 or 41.67 per cent. of whom were killed at face of workings, 5 or 41.67 per cent. of whom were killed on gangways, and 2 or 16.66 per cent. in crosscuts. Of the 12 fatalities, 11 or 91.67 per cent. were due to the carelessness of the victims and 1 or 8.33 per cent. was unavoidable.



41 miners killed by blasts, 38 or 92.68 per cent. of whom were killed at face of workings, 2 or 4.88 per cent. in crosscuts, and 1 or 2.44 per cent. in old workings. Of the 41 fatalities, 33 or 80.49 per cent. were due to the carelessness of the victims, 2 or 4.88 per cent. to the carelessness of others and 6 or 14.63 per cent. were unavoidable.

3 miners killed, falling down chamber. Accidents were unavoidable.

2 miners killed, falling down manway through their own carelessness.

1 miner killed, falling down chute, accident was unavoidable.

2 miners suffocated by gas, accidents due to their own carelessness.

2 miners killed, crushed at batteries, 1 or 50 per cent. due to the carelessness of the victim and 1 or 50 per cent. was unavoidable.

1 miner killed by electricity, through his own carelessness.

3 miners killed, burned by powder, accident due to the carelessness of the victims.

2 miners killed, struck by drill through their own carelessness.

1 miner killed, struck by lever, accident was unavoidable.

1 miner killed by falling timber, accident was unavoidable.

3 miners killed, rush of coal and water, accidents were unavoidable.

1 miner killed, rush of coal, accident was unavoidable.

1 miner killed, rush of clay, through his own carelessness.

1 miner killed, rush of gob, through his own carelessness.

The total number of miners killed was 262. 196 or 74.81 per cent. were killed through their own carelessness, 5 or 191 per cent. through the carelessness of others, and 61 or 23.28 per cent. were unavoidable.

69 laborers killed by falls, 45 or 65.22 per cent. of whom were killed at face of workings, 13 or 18.84 per cent. while removing pillars, 7 or 10.14 per cent. on gangways while timbering and repairing, 2 or 2.90 per cent. back in chambers, 1 or 1.45 per cent. in crosscut, and 1 or 1.45 per cent. in abandoned workings. Of the 69 fatalities, 22 or 31.88 per cent. were due to the carelessness of the victims, 15 or 21.74 per cent. to the carelessness of others, and 32 or 46.38 per cent. were unavoidable.

13 laborers killed by cars, 6 or 46.16 per cent. of whom were killed on gangways, 1 or 7.69 per cent. in chamber, 5 or 38.46 per cent. on slopes and 1 or 7.69 per cent. at foot of shaft. Of the 13 fatalities, 8 or 61.54 per cent. were due to the carelessness of the victims, 1 or 7.69 per cent. to the carelessness of others, and 4 or 30.77 per cent. were unavoidable.

5 laborers killed by explosions of gas, 4 or 80 per cent. of whom were killed in chambers, and 1 or 20 per cent. in old workings. Of the 5 fatalities, 2 or 40 per cent. were due to the carelessness of the victims, and 3 or 60 per cent. to the carelessness of others.

6 laborers were killed by blasts, 5 or 83.33 per cent. of whom were killed at face of workings, and 1 or 16.67 per cent. in crosscut. Of the 6 fatalities, 4 or 66.67 per cent. were due to the carelessness of victims and 2 or 33.33 per cent. were due to the carelessness of others.

4 laborers were killed by explosions of powder and dynamite, 1, or 25 per cent. of whom were killed at face of workings, 2 or 50 per

cent. on gangways, and 1 or 25 per cent. in crosscut. Of the 4 fatalities, 3 or 75 per cent. were due to the carelessness of the victims and 1 or 25 per cent. was unavoidable.

2 laborers suffocated by gas through their own carelessness.

1 laborer was killed by falling down slope, accident was unavoidable.

6 laborers killed by falling into shafts, 4 or 66.66 per cent. due to the carelessness of the victims, 1 or 16.67 per cent. due to the carelessness of others and 1 or 16.67 per cent. was unavoidable.

2 laborers killed by electricity on gangway, 1 or 50 per cent. was due to the carelessness of the victim and 1 or 50 per cent. was unavoidable.

1 laborer was killed, crushed at battery, through his own carelessness.

2 laborers killed by falling timber, accidents were unavoidable.

1 laborer killed, struck by rope, through his own carelessness.

1 laborer killed by falling ice in shaft, accident was unavoidable.

1 laborer was killed by an explosion of oil in old workings, through his own carelessness.

1 laborer killed by falling over piece of coal, accident was unavoidable.

1 laborer killed by rush of rock, through his own carelessness.

1 laborer was killed by rush of coal, accident was unavoidable.

The total number of laborers killed was 117, 50 or 42.74 per cent. of whom were killed through their own carelessness, 22 or 18.80 per cent. through the carelessness of others, and 45 or 38.46 per cent. were unavoidable.

42 drivers killed. Of this number, 2 or 4.76 per cent. killed by falls at face of workings, 1 or 2.38 per cent. in pillar workings, 3 or 7.15 per cent. on gangways while riding on cars, and 1 or 2.38 per cent. at foot of slope; 23 or 54.76 per cent. were killed by cars on gangways, 1 or 2.38 per cent. in chamber, 1 or 2.38 per cent. in tunnel, 3 or 7.15 per cent. on slopes, 1 or 2.38 per cent. at foot of slope; 1 or 2.38 per cent. by explosion of gas in chamber, 1 or 2.38 per cent. by a blast in crosscut, 2 or 4.76 per cent. kicked by mules, 1 or 2.38 per cent. by falling on gangway, and 1 or 2.38 per cent. struck by cage. Of the 42 fatalities, 27 or 64.29 per cent. were due to the carelessness of the victims, 1 or 2.38 per cent. to the carelessness of others, and 14 or 33.33 per cent. were unavoidable.

11 company men were killed. Of this number, 1 or 9.09 per cent. by fall at face of working place, 1 or 9.09 per cent. by fall on slope, 4 or 36.37 per cent. by cars on gangway, 1 or 9.09 per cent. by cars on plane, 1 or 9.09 per cent. by explosion of gas in old workings, 2 or 18.18 per cent. by explosion of powder and dynamite on gangway, and 1 or 9.09 per cent. by being struck by rail. Of the 11 fatalities, 6 or 54.55 per cent. were due to the carelessness of the victims, 1 or 9.09 per cent. to the carelessness of others, and 4 or 36.36 per cent. were unavoidable.

66 other persons were killed, including 1 assistant mine foreman, 1 fire boss, 1 engineer, 6 doorboys, 4 timbermen, 2 patchers, 1 motorman, 1 mason, 2 slatemen, 1 trackman, 1 pipeman, 3 repairmen, 3 loaders, 1 poleboy, 1 switchboy, 1 pumpman, 2 rockmen, 3 brattice-men, 2 tracklayers, 2 headmen, 2 muckers, 1 shaftman, 3 chargemen,

1 machine runner, 2 slushmen, 1 brakeman, 1 spragger, 1 coupler, 5 footmen, 1 stable boss, 1 bottomman, 1 loaderboss, 5 starters, 1 machine helper, and 1 batteryman. Of the 66 fatalities, 43 or 65.15 per cent. were due to the carelessness of the victims, 3 or 4.55 per cent. to the carelessness of others, and 20 or 30.30 per cent. were unavoidable.

Of the 498 accidents that occurred inside the mines, 322 or 64.66 per cent. are attributed to the carelessness of the victims themselves, 32 or 6.43 per cent. to the carelessness of others, 144 or 28.91 per cent. to unavoidable accidents.





## Causes and Location of Fatal Accidents by Districts, 1912—Continued

Inside	Districts																			Totals
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Suffocation by gas in chute, dynamite at face, .....	1																2			2
Explosions of powder and dynamite on gangway, .....					2		2	1			1	1								9
Explosions of powder and dynamite in heading, .....		1	1			1		1	6						1		1			12
Explosions of blasts at face, .....	1	2	6	5	1	3	3	3	4	4	3	3			2	1	2	1	1	4
Explosions of blasts in heading, .....				1			1	1												4
Explosions of blasts in old workings, .....								1	2											4
Falling into shafts, .....	1	3	1					1		3	1	1	2	1	1			1		10
Falling down slopes, etc., .....											1	2		1						8
Crushed at batteries, .....										1	1			1						4
Kicked by mules, .....						1					1			1						4
Electricity on gangway, .....											1	1		1			1			4
Struck by cage, .....	1		1						1								1			4
Struck by timber, .....							1													1
Struck by rope on slope, .....								1												1
Struck by piece of coal, .....								1						1						2
Struck by drill, .....									1											1
Struck by lever, .....									1											1
Struck by rail, .....										1										1
By falling on gangway, .....	1																			1
Burned by powder, .....				1																1
Fall of ice in shaft, .....				1		1														1
Explosion of oil in old workings, .....							1						1							1
By falling over piece of coal, .....												1								1
Rush of coal on gangway, .....																2				2
Rush of coal, .....																		1		1
Rush of rock, .....																		1		1
Rush of clay, .....																			1	1
Rush of coal and water, .....																				1
Rush of culm and water, .....																				1
Totals, .....	17	30	35	26	17	40	49	28	39	27	19	30	12	18	18	15	17	15	27	498

## Causes and Location of Fatal Accidents by Districts, 1912—Continued

Outside	Districts																					Totals
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
Cars, .....	2	2	2	1	1	1	1	2	3	4	2	5	3	4	2	1	3	2	1	2	1	
Machinery, .....	1	1	1	1	2	4	1	1	1	1	3	1	2	1	1	1	2	1	4	1	1	
Suffocation in chutes, etc., .....	1	2	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	
Electricity, .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Struck by rope, .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Struck by pole, .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Struck by timber, .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Struck by falling trough, .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Struck by falling shed, .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Struck by frozen culm, .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Struck by lever, .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Falling from scaffold, .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Falling from tower, .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Falling from timber wharf, .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Falling in washery, .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Rush of rock, .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Rush of culm, .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Fall of clay, .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Fall of culm, .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Scalded by steam, .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Burned by ashes, .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Kicked by mule, .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Explosion of blast, .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Explosion of powder and dynamite, .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Caught in elevators, .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Totals, .....	4	6	3	2	6	5	1	4	3	8	10	7	8	8	3	4	9	1	7	2	103	
Grand totals inside and outside, .....	21	36	38	28	23	45	50	32	42	35	29	37	20	26	21	19	26	16	34	12	601	

## CAUSES AND LOCATION OF FATAL ACCIDENTS, 1910-1912 INCLUSIVE

This table shows that the causes of accidents and the places they occur are very much the same from year to year. This is especially true of falls of coal, slate and roof, which occur at the face, while removing pillars, while repairing gangways or while working at the face of gangways.

The accidents by cars and the explosion of blasts occur from year to year in about the same way and at the same relative places.

During the period covered by the table 752 fatal accidents inside were caused by falls or 46.36 per cent. of the total number; 262 by cars or 16.15 per cent. of the total number; 178 by blasts or 10.97 per cent. of the total number; 68 by powder explosions or 4.19 per cent. of the total number, and only 89 by explosions of gas or 5.49 per cent. of the total number.

Most of the victims could have been saved had they used proper precautions.

The accidents from blasts and explosives number about 15 per cent. and are chargeable directly to the miner who extracts the coal. Of the 1014 accidents by falls and cars, at least one-half could have been prevented by proper prudence and care.

### CAUSES AND LOCATION OF FATAL ACCIDENTS INSIDE 1910-1912 Inclusive

	1910	1911	1912	Totals	Percentages
Falls of coal, slate and roof at face, .....	173	166	153	492	.....
Falls of coal, slate and roof at pillar work, .....	31	44	37	112	.....
Falls of coal, slate and roof on gangways while timbering and repairing, .....	24	20	36	80	.....
Falls of coal, slate and roof back in chamber, .....	21	15	4	40	.....
Falls of coal, slate and roof on slopes, .....	2	1	1	4	.....
Falls of coal, slate and roof at cross headings, .....	2	2	4	8	.....
Falls of coal, slate and roof in old workings, .....	.....	1	3	4	.....
Falls of coal, slate and roof in chute, .....	.....	1	4	5	.....
Falls of coal, slate and roof in tunnel, .....	.....	1	.....	1	.....
Falls of coal, slate and roof in strange chamber, .....	.....	2	.....	2	.....
Falls of coal, slate and roof in airway, .....	.....	.....	1	1	.....
Falls of coal, slate and roof at bottom of slope, .....	.....	.....	1	1	.....
Falls of coal, slate and roof on plane, .....	.....	.....	1	1	.....
Falls of coal, slate and roof in sump, .....	.....	.....	1	1	.....
	253	253	246	752	46.36
By cars on gangway, .....	57	47	55	159	.....
By cars in chamber, .....	6	11	2	19	.....
By cars on slope, .....	17	18	14	49	.....
By cars at foot of shaft, .....	2	4	2	8	.....
By cars at foot of slope, .....	8	5	2	15	.....
By cars at dump chute, .....	2	2	.....	4	.....
By cars in tunnel, .....	.....	3	1	4	.....
By cars at mouth of drift, .....	.....	1	.....	1	.....
By cars on plane, .....	.....	1	2	3	.....
	92	92	78	262	16.15
By explosions of blast at face of chamber, .....	48	59	46	153	.....
By explosions of blast on gangway, .....	6	1	.....	7	.....
By explosions of blast at pillar work, .....	4	1	.....	5	.....
By explosions of blast in cross heading, .....	1	6	4	11	.....
By explosions of blast in tunnel, .....	1	.....	.....	1	.....
By explosions of blast in old workings, .....	.....	.....	1	1	.....
	60	67	51	178	10.97

## CAUSES AND LOCATION OF FATAL ACCIDENTS 1910-1912—Continued

	1910	1911	1912	Totals	Percentages
Explosions of powder and dynamite at face, .....	9	6	9	24	.....
Explosions of powder and dynamite on gangway, .....	.....	13	12	25	.....
Explosions of powder and dynamite in cross heading, ..	7	2	4	13	.....
Explosions of powder and dynamite in tunnel, .....	1	.....	.....	1	.....
Explosions of powder and dynamite, location not given, ..	5	.....	.....	5	.....
	22	21	25	68	4.19
Explosions of gas in chamber, .....	14	13	22	49	.....
Explosions of gas on gangway, .....	3	9	3	15	.....
Explosions of gas in old workings, .....	2	3	9	14	.....
Explosions of gas on slope, .....	1	.....	.....	1	.....
Explosions of gas in cross heading, .....	.....	4	.....	4	.....
Explosions of gas in tunnel, .....	.....	5	.....	5	.....
Explosions of gas in manway, .....	.....	.....	1	1	.....
	20	34	35	89	5.49
Suffocation by gas, .....	13	14	5	32	1.97
Suffocation by mine fire, .....	.....	*72	.....	72	4.44
Falling into shafts, slopes, etc., .....	19	21	18	58	3.58
Crushed at batteries, .....	3	5	4	12	.74
By electricity, .....	3	2	5	10	.62
By machinery, .....	2	4	.....	6	.37
Miscellaneous causes, .....	22	30	31	83	5.12
Totals, .....	509	615	498	1622	100.00

\*Pancoast disaster.

## COMPARATIVE TABLE OF ACCIDENTS

## Pennsylvania—United States, 1899-1912 Inclusive

The table herewith shows the fatal accidents in the anthracite mines of Pennsylvania as compared with those in the bituminous mines of the United States.

During the fourteen years, 3.64 lives were lost per 1,000 employes in the mines of United States as against 3.48 in the anthracite mines. In the United States 5.60 lives were lost for every 1,000,000 tons produced. In the anthracite mines 7.59 lives were lost for every 1,000,000 tons produced. In the United States 178,553 tons were produced per life lost. In the anthracite mines 131,769 tons were produced per life lost. In the number of accidents per 1,000 employes the anthracite makes the better showing, but there is a larger production of coal per life lost in the United States.



Years	United States					Pennsylvania				
	Production	Employees	Total accidents	Lives lost per 1,000 employees	Lives lost per 1,000,000 tons produced	Production per life lost	Production	Employees	Total accidents	Lives lost per 1,000 employees
1899, .....	244,838,000	396,624	1,216	3.07	4.97	201,006	60,518,331	140,604	461	3.28
1900, .....	260,164,000	432,453	1,482	3.45	5.73	171,000	57,383,396	143,824	411	2.86
1901, .....	288,723,000	476,655	1,549	3.25	6.31	186,000	61,094,665	147,651	513	2.86
1902, .....	296,687,000	510,437	1,895	3.71	6.39	187,000	41,310,935	148,139	390	2.03
1903, .....	345,290,000	547,431	1,752	3.20	5.08	187,000	75,332,563	151,827	518	3.41
1904, .....	339,165,000	573,373	2,004	3.60	5.49	187,000	73,394,369	161,330	595	3.69
1905, .....	386,379,000	615,628	2,232	3.63	5.78	173,000	78,647,020	168,254	644	3.83
1906, .....	407,835,000	631,086	2,116	3.37	5.19	173,000	72,139,510	166,175	557	3.35
1907, .....	461,406,000	655,418	2,137	4.88	6.93	144,000	86,536,412	168,174	708	4.20
1908, .....	401,323,000	672,791	2,440	3.64	6.05	165,000	83,543,243	171,503	678	3.88
1909, .....	460,761,000	666,543	2,668	4.00	5.79	172,000	80,233,833	171,195	567	3.31
1910, .....	501,596,000	725,039	2,840	3.92	5.66	172,000	83,683,944	166,175	601	3.57
1911, .....	496,221,000	728,318	2,719	3.73	5.48	183,000	90,917,176	173,338	639	4.03
1912, .....	*550,000,000	750,000	2,340	3.15	4.29	183,000	84,426,899	175,068	601	3.43
Totals and averages, .....	5,443,908,000	8,381,800	30,489	3.64	5.60	178,553	1,031,782,000	2,356,887	7,853	3.48
										7.59
										131,769

\* Estimated.

TABLE 1.—Number of minor children killed inside and outside the mines, 1912

Districts	Inside					Totals	Outside						Totals	Grand totals inside and outside
	Boys 20 years	Boys 19 years	Boys 18 years	Boys 17 years	Boys 16 years		Boys 20 years	Boys 19 years	Boys 18 years	Boys 17 years	Boys 16 years	Boys 15 years	Boys 14 years	
First, .....	1	1	1	1	1	5	1	1	1	1	1	1	1	1
Second, .....	1	1	1	1	1	5	1	1	1	1	1	1	1	1
Third, .....	1	1	1	1	1	5	1	1	1	1	1	1	1	1
Fourth, .....	1	1	1	1	1	5	1	1	1	1	1	1	1	1
Fifth, .....	1	1	1	1	1	5	1	1	1	1	1	1	1	1
Sixth, .....	1	1	1	1	1	5	1	1	1	1	1	1	1	1
Seventh, .....	1	1	1	1	1	5	1	1	1	1	1	1	1	1
Eighth, .....	1	1	1	1	1	5	1	1	1	1	1	1	1	1
Ninth, .....	1	1	1	1	1	5	1	1	1	1	1	1	1	1
Tenth, .....	1	1	1	1	1	5	1	1	1	1	1	1	1	1
Eleventh, .....	1	1	1	1	1	5	1	1	1	1	1	1	1	1
Twelfth, .....	1	1	1	1	1	5	1	1	1	1	1	1	1	1
Thirteenth, .....	1	1	1	1	1	5	1	1	1	1	1	1	1	1
Fourteenth, .....	1	1	1	1	1	5	1	1	1	1	1	1	1	1
Fifteenth, .....	1	1	1	1	1	5	1	1	1	1	1	1	1	1
Sixteenth, .....	1	1	1	1	1	5	1	1	1	1	1	1	1	1
Seventeenth, .....	1	1	1	1	1	5	1	1	1	1	1	1	1	1
Eighteenth, .....	1	1	1	1	1	5	1	1	1	1	1	1	1	1
Nineteenth, .....	1	1	1	1	1	5	1	1	1	1	1	1	1	1
Twentieth, .....	1	1	1	1	1	5	1	1	1	1	1	1	1	1
Twenty-first, .....	1	1	1	1	1	5	1	1	1	1	1	1	1	1
Totals, .....	5	19	20	5	4	52	3	5	9	8	5	1	31	84

TABLE 2.—Number and causes of fatal accidents inside the mines, production, employees, lives lost per 1,000 employees, production per life lost, lives lost per 1,000,000 tons produced, 1912

Counties	Fatal Accidents Inside					Production in tons of 2,000 pounds	Employees inside	Lives lost inside per 1,000 employees	Tons of coal produced per life lost inside	Lives lost inside per 1,000,000 tons produced
	By falls	By cars	By explosions of gas	By miscellaneous causes	Totals					
Luzerne, .....	83	41	24	54	202	32,643,232	47,133	4.29	161,600	6.19
Lackawanna, .....	79	13	4	31	127	20,617,308	34,074	3.73	162,341	6.16
Schuylkill, .....	55	16	5	33	109	17,986,745	26,619	4.09	165,016	6.06
Northumberland, .....	23	5	1	8	36	6,851,491	11,002	3.27	190,319	5.25
Totals, .....	239	75	34	126	474	78,098,776	118,828	3.99	164,765	6.07
Carbon, .....	1	2	...	5	8	2,843,876	4,083	1.96	355,484	2.81
Columbia, .....	3	...	...	3	6	1,214,527	1,440	4.17	202,421	4.94
Dauphin, .....	...	1	1	1	3	945,102	1,606	1.87	315,034	3.17
Susquehanna, .....	3	...	...	4	7	582,510	1,044	6.70	83,216	12.02
Sullivan, .....	...	...	...	...	...	649,235	677	...	...	...
Wayne, .....	...	...	...	...	...	92,843	129	...	...	...
Totals, .....	7	3	1	13	24	6,328,093	8,979	2.67	263,671	3.79
Grand totals and averages, .....	246	78	35	139	498	84,426,869	127,807	3.90	169,532	5.90



TABLE 4.—Nationality by birth of employes killed by falls, 1912

Districts	Foreigners				Americans *								Grand totals
	By falls at or near face	By falls while taking out pillars	By falls on gangway while timbering and repairing	Totals	By falls at or near face	By falls while taking out pillars	By falls on gangway while timbering and repairing	By falls in stump	By falls on plane	By falls on slope	Totals		
First, .....	2	5	.....	8	2	3	.....	.....	.....	.....	5	13	
Second, .....	19	.....	.....	19	2	.....	.....	.....	.....	1	3	22	
Third, .....	13	2	2	17	1	.....	1	.....	.....	.....	2	19	
Fourth, .....	9	.....	.....	9	3	.....	.....	.....	.....	.....	3	12	
Fifth, .....	6	1	.....	7	2	.....	1	.....	.....	.....	3	11	
Sixth, .....	13	1	1	15	4	4	1	.....	.....	.....	9	24	
Seventh, .....	12	.....	1	13	1	.....	.....	1	.....	.....	2	15	
Eighth, .....	12	1	1	14	.....	.....	.....	.....	1	.....	1	15	
Ninth, .....	6	.....	1	7	4	.....	.....	.....	.....	.....	4	11	
Tenth, .....	9	.....	1	10	2	.....	.....	.....	.....	.....	2	12	
Eleventh, .....	2	3	1	6	1	.....	.....	.....	.....	.....	1	7	
Twelfth, .....	13	.....	1	14	.....	.....	1	.....	.....	1	2	16	
Thirteenth, .....	2	2	.....	4	2	.....	.....	.....	.....	.....	2	6	
Fourteenth, .....	5	.....	.....	7	.....	2	.....	.....	.....	.....	3	10	
Fifteenth, .....	6	.....	.....	8	.....	2	1	.....	.....	.....	3	11	
Sixteenth, .....	3	.....	.....	5	3	1	.....	.....	.....	.....	4	9	
Seventeenth, .....	1	.....	.....	1	1	.....	.....	.....	.....	.....	1	2	
Eighteenth, .....	4	4	.....	10	.....	.....	.....	.....	.....	.....	.....	10	
Nineteenth, .....	8	4	1	13	3	.....	1	.....	.....	.....	4	17	
Twentieth, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Twenty-first, .....	4	.....	.....	4	1	.....	.....	.....	.....	.....	1	5	
Totals, .....	150	27	14	191	35	10	6	1	1	2	55	246	

\* English speaking employes including Americans, English, Scotch, Irish, Welsh and Germans.



TABLE 5.—Part 1.—Number and causes of fatal accidents inside the mines, employees and lives lost per 1,000 employees, by counties, 1912

Counties and Districts	Fatal Accidents Inside By										
	Employees	Falls	Lives lost by falls per 1,000 employees	Cars	Lives lost by cars per 1,000 employees	Explosions of gas	Lives lost by explosions of gas per 1,000 employees	Suffocation by gas, etc.	Lives lost by suffocation of gas, etc., per 1,000 employees	Explosions of powder and dynamite	Lives lost by explosions of powder and dynamite per 1,000 employees
Luzerne, Lackawanna, Susquehanna, Wayne and Sullivan:—											
First, .....	4,141	13	3.14	.....	.....	.....	.....	.....	.....	1	.24
Second, .....	9,574	22	2.30	4	.42	.....	.....	.....	.....	1	.10
Third, .....	8,334	19	2.28	4	.48	1	.12	.....	.....	1	.12
Fourth, .....	6,883	12	1.74	4	.58	.....	.....	.....	.....	.....	.....
Fifth, .....	5,185	10	1.15	1	.19	3	.58	.....	.....	.....	.39
Sixth, .....	8,626	24	2.78	8	.93	2	.23	.....	.....	.....	.12
Seventh, .....	8,506	15	1.76	12	1.41	12	1.41	.....	.....	.....	.24
Eighth, .....	6,165	15	2.43	4	.65	1	.16	.....	.....	.....	.49
Ninth, .....	8,156	11	1.35	7	.86	6	.74	.....	.....	.....	.74
Tenth, .....	7,384	12	1.62	4	.54	3	.41	.....	.....	.....	.14
Eleventh, .....	7,317	7	1.46	6	.82	.....	.....	.....	.....	1	.36
Twelfth, .....	2,156	5	1.81	.....	.....	.....	.....	.....	.....	.....	.....
Totals and averages, .....	83,057	165	1.99	54	.65	28	.34	.....	.....	19	.....
Carbon, Schuylkill, Columbia, Northumberland and Dauphin:—											
Twelfth, .....	5,127	16	3.12	8	.59	3	.59	.....	.....	1	.20
Thirteenth, .....	4,522	6	1.33	1	.22	1	.22	.....	.....	.....	.....
Fourteenth, .....	4,331	10	2.36	2	.47	.....	.....	.....	.....	.....	.....
Fifteenth, .....	5,337	11	2.08	2	.37	1	.19	1	.24	.....	.56
Sixteenth, .....	5,130	9	1.75	2	.38	.....	.....	.....	.....	3	.....
Seventeenth, .....	6,510	2	.31	7	1.05	.....	.....	.....	.....	1	.15



TABLE 5.—Part 1—Continued

Counties and Districts	Fatal Accidents Inside By						
	Blasts, premature and otherwise	Lives lost by blasts, premature and otherwise per 1,000 employees	Falling into shafts, etc.	Lives lost by falling into shafts, etc., per 1,000 employees	Crushed at batteries	Lives lost by being crushed at batteries per 1,000 employees	Kicked by mules
						Lives lost by being kicked by mules per 1,000 employees	Machinery
							Lives lost by machinery per 1,000 employees
Luzerne, Lackawanna, Susquehanna, Wayne and Sullivan:—							
First, .....	1	.24	1	.10	1		
Second, .....	2	.21	3	.36	1		
Third, .....	6	.72	1	.15			
Fourth, .....	6	.87					
Fifth, .....	1	.19					
Sixth, .....	3	.35					
Seventh, .....	4	.47					
Eighth, .....	4	.65	1	.16			
Ninth, .....	4	.49	2	.25			
Tenth, .....	4	.54	3	.41	1	.14	
Eleventh, .....	3	.41					
Twelve, .....	2	.73					
Totals and averages, .....	40	.48	11	.13	1	.01	
Carbon, Schuylkill, Columbia, Northumberland and Dauphin:—							
Twelfth, .....	3	.59	1	.20	2	.39	
Thirteenth, .....			2	.44			
Fourteenth, .....			1	.24	1	.24	
Fifteenth, .....			1	.19			
Sixteenth, .....	1	.19					
Seventeenth, .....	2	.31					

Eighteenth, .....	1	.22	1	.22	.....	.....	.....	.....	.....	.....
Nineteenth, .....	1	.20	.....	.....	.....	.....	.....	.....	.....	.....
Twentieth, .....	3	.70	1	.93	.....	.....	.....	.....	.....	.....
Totals and averages, .....	11	.25	7	.16	3	.07	1	.02	.....	.....
Grand totals and averages, .....	51	.40	18	.14	4	.03	2	.02	.....	.....



TABLE 5.—Part 1—Continued

Counties and Districts	Fatal Accidents Inside By				Total number of fatal accidents inside	Lives lost per 1,000 employees	Production in tons of 2,000 pounds	Lives lost per 1,000,000 tons produced	Tons of coal produced per life lost	Tons of coal produced per employe
	Electricity	Lives lost by electricity per 1,000 employes	Miscellaneous causes	Lives lost by miscellaneous causes per 1,000 employes						
Luzerne, Lackawanna, Susquehanna, Wayne and Sullivan:—										
First, .....	.....	.....	21	.48	17	4.11	2,597,345	6.55	152,785	6.7
Second, .....	.....	.....	1	.12	30	3.13	5,305,895	5.65	137,893	5.4
Third, .....	.....	.....	1	.15	35	4.20	4,558,349	7.68	130,239	5.4
Fourth, .....	.....	.....	2	.29	26	3.78	3,507,741	5.70	125,459	6.3
Fifth, .....	.....	.....	1	.12	17	2.28	3,507,741	4.85	208,328	6.3
Sixth, .....	.....	.....	4	.47	40	4.64	5,325,737	7.51	133,168	6.7
Seventh, .....	.....	.....	1	.12	49	5.44	5,993,173	8.18	122,310	7.05
Eighth, .....	.....	.....	3	.37	28	4.54	4,288,146	6.73	173,118	7.05
Ninth, .....	.....	.....	3	.37	39	4.78	5,735,250	6.80	147,078	7.08
Tenth, .....	.....	.....	1	.14	27	3.66	4,844,642	5.57	179,131	6.78
Eleventh, .....	.....	.....	1	.36	19	2.59	5,853,338	3.25	308,070	7.67
Twenty-first, .....	.....	.....	13	.16	9	3.27	2,012,571	4.47	223,619	7.30
Totals and averages, .....	.....	.....	4	.05	226	4.05	54,585,137	6.16	162,476	6.57
Carbon, Schuylkill, Columbia, Northumberland and Dauphin:—										
Twelfth, .....	.....	.....	1	.20	30	5.85	3,130,459	9.58	104,349	6.11
Thirteenth, .....	.....	.....	2	.44	12	2.65	2,960,338	4.05	216,695	6.75
Fourteenth, .....	.....	.....	1	.24	18	4.25	3,454,295	5.21	191,905	8.16
Fifteenth, .....	.....	.....	2	.39	18	3.37	3,376,376	5.33	187,576	6.33
Sixteenth, .....	.....	.....	2	.39	15	2.92	3,126,189	4.80	208,413	6.99
Seventeenth, .....	.....	.....	3	.46	17	2.61	4,694,703	3.62	276,159	7.31



TABLE 5.—Part 2.—Number and causes of fatal accidents outside the mines, employees and lives lost per 1,000 employees by counties, 1912

Counties and Districts	Employees	Fatal Accidents Outside By										Lives lost inside and outside per 1,000 employees	Fatal accidents inside and outside	Number of employees inside and outside	Lives lost per 1,000 employees	Total number of fatal accidents outside
		Cars	Lives lost by cars per 1,000 employees	Machinery	Lives lost by machinery per 1,000 employees	Suffocation in chutes, etc.	Lives lost by suffocation in chutes, etc., per 1,000 employees	Boiler explosions	Lives lost by boiler explosions, per 1,000 employees	Electricity	Lives lost by electricity per 1,000 employees	Miscellaneous causes	Lives lost by miscellaneous causes per 1,000 employees			
Luzerne, Lackawanna, Susquehanna, Wayne and Sullivan:—																
First.....	1,534	2	1.30	1	.65	2	.71	.....	.....	.....	.....	1	.65	4	2.61	4
Second.....	2,810	2	.71	2	.71	.....	.....	.....	.....	.....	.....	.....	.....	6	2.14	6
Third.....	2,067	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	1.45	3
Fourth.....	1,814	.....	.....	1	.55	1	.55	.....	.....	.....	.....	.....	.....	3	1.45	3
Fifth.....	1,777	.....	.....	2	1.13	.....	.....	.....	.....	.....	.....	.....	.....	5	1.45	5
Sixth.....	2,785	1	.35	.....	.....	4	1.44	.....	.....	.....	.....	.....	.....	6	1.80	6
Seventh.....	2,396	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	1.42	5
Eighth.....	2,064	.....	.87	1	.48	.....	.....	.....	.....	.....	.....	.....	.....	4	1.94	4
Ninth.....	2,385	3	1.25	1	.43	.....	.....	.....	.....	.....	.....	.....	.....	3	1.25	3
Tenth.....	2,344	4	1.11	.....	.54	.....	.....	.....	.....	.....	.....	.....	.....	8	3.41	8
Eleventh.....	3,557	3	.56	3	.54	.....	.....	.....	.....	.....	.....	.....	.....	10	2.81	10
Twelfth.....	983	1	1.01	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	2.01	2
Totals and averages.....	29,539	20	.75	11	.41	7	.26	.....	.....	.....	.....	15	.57	54	2.03	54
Carbon, Schuylkill, Columbia, Northumberland and Dauphin:—																
Twelfth.....	2,108	5	2.37	.....	.50	.....	.....	.....	.....	.....	.....	.....	.....	7	3.32	7
Thirteenth.....	2,492	3	1.50	2	.40	.....	.80	.....	.....	.....	.....	.....	.....	8	3.20	8
Fourteenth.....	2,672	.....	.....	.....	.....	1	.38	.....	.....	.....	.....	.....	.....	8	3.06	8
Fifteenth.....	2,010	2	1.53	.....	.40	.....	.....	.....	.....	.....	.....	.....	.....	3	1.44	3
Sixteenth.....	2,163	1	.46	.....	.....	.....	.46	.....	.....	.....	.....	.....	.....	3	1.44	3
Seventeenth.....	3,131	3	.54	2	.63	1	.31	.....	.....	.....	.....	.....	.....	9	1.85	9
Totals and averages.....	18,147	13	1.54	11	.63	1	.31	.....	.....	.....	.....	.....	.....	39	2.53	39







TABLE 6—Continued

Years	Fatal Accidents By				Total number of fatal accidents inside	Total number of fatal accidents outside	Grand total of fatal accidents inside and outside	Number of employes inside and outside	Production in tons of 2,000 pounds	Lives lost per 1,000 employes	Tons of coal produced per life lost	Lives lost per 1,000,000 tons produced	
	Electricity	Miscellaneous Causes		Percentages									
		Number	Percentages	Number									Percentages
1899	.....	.....	30	7.71	389	72	461	140,604	60,518,331	3.28	131,276	7.62	
1900	.....	.....	23	6.43	358	53	411	143,824	57,393,396	2.86	139,370	7.16	
1901	.....	.....	38	8.62	441	72	513	147,671	67,094,665	3.47	139,789	7.65	
1902	.....	.....	22	8.98	245	55	300	148,139	41,340,535	2.03	137,803	7.26	
1903	.....	.....	33	7.74	426	92	518	151,827	75,232,585	3.41	145,237	6.89	
1904	.....	.....	62	12.50	496	99	595	161,730	73,594,379	3.69	123,678	8.08	
1905	.....	.....	36	6.53	551	93	644	168,254	78,647,020	3.83	122,123	8.19	
1906	.....	.....	31	6.80	476	101	557	166,175	72,139,510	3.35	139,511	7.72	
1907	.....	.....	75	12.48	601	107	708	168,174	86,076,412	4.20	121,549	8.23	
1908	.....	.....	50	8.39	596	82	678	174,503	83,543,243	3.88	123,220	8.12	
1909	.....	.....	17	8.99	490	77	567	171,197	80,223,833	3.31	141,488	7.07	
1910	.....	.....	6	7.86	509	92	601	168,175	83,683,994	3.57	139,241	7.18	
1911	.....	.....	32	20.32	615	84	699	173,378	97,917,176	4.03	139,067	7.19	
1912	.....	.....	40	8.03	498	103	601	175,098	94,426,869	3.13	140,477	7.12	
Totals and percentages	.....	.....	649	9.73	6,671	1,182	7,853	2,258,887	1,034,782,338	3.48	131,769	7.59	

NOTE:—In the 14 years covered by this table, the percentage of accidents from the several causes has been very uniform. During 1912 the percentage by falls was 49.40, and the average percentage for the 14 years was 49. The percentage of accidents from cars inside the mines for 1912 was 15.06, and the average percentage for the 14 years was 15.34. The percentage of accidents from explosions of gas in 1912 was 7.03, and the average percentage for the 14 years was the same. The percentage of accidents from explosives in 1912 was 5.02, and the average percentage for the 14 years was 5.27. The percentage of accidents from blasts of all kinds in 1912 was 10.24, and the average percentage for the 14 years was 9.56. The percentage of shaft accidents for 1912 was 3.61, and the average percentage for the 14 years was 4.72.

The percentage of fatal accidents from falls, cars, gas, explosives, blasts and shafts in 1912 was 90.95 of the total number inside, and the average percentage from these causes for the 14 years was 89.92.

TABLE 7.—Number of mines in operation, production, number of inside employees, number of lives lost inside, production per life lost inside and number of lives lost inside per 1,000,000 tons produced in each district, 1912

Districts	Mines in operation	Production in tons of 2,000 pounds	Inside employees	Lives lost inside	Production per life lost inside	Lives lost per 1,000,000 tons produced
First, .....	24	2,597,345	4,141	17	152,785	6.55
Second, .....	36	5,305,892	9,574	30	176,863	5.65
Third, .....	32	4,558,349	8,334	35	130,239	7.68
Fourth, .....	29	4,561,943	6,883	26	175,459	5.70
Fifth, .....	33	3,507,711	5,185	17	206,338	4.85
Sixth, .....	41	5,326,737	8,626	40	133,168	7.51
Seventh, .....	48	5,993,173	8,506	49	122,310	8.18
Eighth, .....	29	4,288,146	6,165	28	153,148	6.53
Ninth, .....	41	5,735,250	8,156	39	147,068	6.80
Tenth, .....	50	4,844,642	7,384	27	179,431	5.57
Eleventh, .....	85	5,853,338	7,347	19	308,070	3.25
Twelfth, .....	19	3,130,459	5,127	30	104,349	9.58
Thirteenth, .....	30	2,960,338	4,522	12	246,695	4.05
Fourteenth, .....	31	3,454,295	4,234	18	191,905	5.21
Fifteenth, .....	27	3,376,376	5,337	18	187,576	5.33
Sixteenth, .....	45	3,125,189	5,130	15	208,413	4.80
Seventeenth, .....	31	4,694,703	6,510	37	276,159	3.62
Eighteenth, .....	15	2,984,284	4,497	15	198,922	7.70
Nineteenth, .....	50	3,505,339	5,078	27	129,827	3.83
Twentieth, .....	24	2,609,759	4,315	10	260,976	4.47
Twenty-first, .....	16	2,012,571	2,756	9	223,619	5.90
Totals and averages, .....	778	84,426,869	127,807	498	169,532	5.90

TABLE 8.—Causes of fatal accidents inside the mines and production per accident, by counties, 1899-1912, inclusive

Years	Counties	Number of mines	Number of inside employes	Production in tons of 2,000 pounds	Fatal accidents by falls	Fatal accidents by explosions of gas	Total fatal accidents inside	Production in tons per fatal accident inside	Lives lost per 1,000,000 tons produced
1899	Luzerne, .....	156	33,078	22,287,712	98	16	144	154,776	6.46
1900		152	34,476	21,481,122	57	17	135	159,119	6.28
1901		148	36,019	23,963,869	95	22	182	131,670	7.59
1902		229	35,491	14,577,949	36	7	93	156,752	6.38
1903		233	38,370	27,878,362	75	15	169	164,961	6.06
1904		256	41,603	27,705,288	166	8	200	138,526	7.22
1905		254	43,109	29,992,636	122	14	215	139,501	7.17
1906		271	41,643	26,612,192	84	27	194	137,176	7.29
1907		243	42,022	30,853,087	105	19	223	138,355	7.23
1908		243	46,302	31,728,997	116	34	258	122,981	8.13
1909		241	45,121	30,992,306	112	16	202	153,427	6.52
1910		250	44,333	32,106,979	96	12	215	149,335	6.70
1911		281	46,863	37,061,582	92	18	205	171,032	5.85
1912		311	47,133	32,643,232	83	24	202	161,600	6.19
	Totals and averages, ..	.....	575,613	387,885,313	1,277	249	2,637	147,093	6.80
1899	Lackawanna, .....	76	22,314	14,838,821	71	2	108	137,397	7.28
1900		83	23,907	13,755,961	55	8	89	154,561	6.47
1901		80	26,207	17,258,125	63	4	109	158,311	6.31
1902		118	25,981	11,851,169	23	.....	43	275,609	3.63
1903		114	27,755	20,046,133	59	3	107	187,347	5.34
1904		115	30,500	19,007,628	62	7	115	165,284	6.05
1905		126	30,853	19,709,164	82	2	127	155,190	6.44
1906		157	31,196	18,840,561	70	4	112	168,219	5.94
1907		155	32,444	22,433,409	87	16	174	128,928	7.75
1908		162	32,296	21,631,995	80	3	141	153,418	6.52
1909		157	33,764	20,489,212	73	1	129	158,831	6.29
1910		157	33,285	21,182,921	87	3	139	152,395	6.56
1911		151	34,069	22,598,414	78	3	218	103,662	9.65
1912		153	34,074	20,617,308	79	4	127	162,341	6.16
	Totals and averages, ..	.....	418,495	264,260,821	969	60	1,738	152,049	6.58
1899	Schuylkill, .....	83	20,474	13,694,171	43	8	90	152,157	6.57
1900		82	19,952	12,998,899	32	11	82	158,523	6.31
1901		76	20,415	15,277,658	39	6	93	164,276	6.09
1902		76	20,876	8,622,103	37	3	60	143,702	6.96
1903		76	20,144	16,389,505	44	6	88	186,244	5.37
1904		106	22,272	16,173,158	43	8	107	151,151	6.62
1905		132	25,716	17,975,160	60	11	136	132,170	7.57
1906		153	25,365	16,376,538	32	7	94	174,218	5.74
1907		140	25,181	20,160,970	48	3	123	163,910	6.10
1908		179	26,625	18,196,714	54	17	121	150,386	6.65
1909		178	25,749	16,794,597	35	7	88	190,848	5.24
1910		188	25,302	17,696,013	44	4	94	188,255	5.31
1911		185	26,015	19,234,447	53	6	118	163,004	6.13
1912		213	26,619	17,986,745	55	5	109	165,016	6.06
	Totals and averages, ..	.....	330,705	227,576,678	619	102	1,403	162,207	6.16
1899	Northumberland, .....	28	9,739	4,860,292	19	2	23	211,317	4.73
1900		27	9,741	4,690,944	15	1	33	142,150	7.63
1901		27	9,867	5,430,991	21	1	26	150,861	6.63
1902		28	9,670	3,162,066	10	10	34	93,002	10.75
1903		26	9,312	5,518,580	21	2	35	157,674	6.34
1904		52	9,248	5,516,647	15	6	39	141,452	7.07
1905		54	9,823	5,483,181	21	5	42	130,552	7.66
1906		70	9,555	5,367,497	17	3	32	167,734	5.96
1907		60	10,653	6,665,392	23	5	45	148,120	6.75
1908		68	10,629	6,067,741	23	3	49	123,831	8.08
1909		67	10,361	5,987,835	25	3	46	130,170	7.68
1910		73	10,665	6,324,317	17	.....	32	197,635	5.06
1911		75	10,772	7,109,372	16	5	39	182,292	5.49
1912		75	11,002	6,851,491	22	1	36	190,319	5.25
	Totals and averages, ..	.....	141,077	79,036,346	265	47	521	151,701	6.59



TABLE 8.—Continued

Years	Counties	Number of mines	Number of inside employees	Production in tons of 2,000 pounds	Fatal accidents by falls	Fatal accidents by explosions of gas	Total fatal accidents inside	Production in tons per fatal accident inside	Lives lost per 1,000,000 tons produced
1899	Carbon, .....	11	2,025	1,826,267	2	.....	10	182,627	5.48
1900		11	2,052	1,863,637	.....	.....	3	621,212	1.61
1901		10	2,265	1,853,519	.....	.....	30	185,852	5.28
1902		10	2,243	1,104,462	1	.....	4	276,116	3.62
1903		15	2,120	2,150,021	1	.....	13	165,286	6.05
1904		20	2,381	2,253,512	7	.....	7	321,930	2.11
1905		23	2,480	2,476,406	.....	.....	9	275,156	2.63
1906		23	2,740	2,246,822	.....	.....	1	374,470	2.67
1907		30	2,989	2,762,523	.....	.....	14	197,323	5.07
1908		22	3,531	2,784,946	.....	.....	9	309,433	3.23
1909		28	3,492	2,652,997	3	1	16	165,812	6.03
1910		33	3,575	3,214,169	3	1	15	214,274	4.67
1911		31	3,607	3,312,482	6	1	18	184,027	5.43
1912		24	4,083	2,843,876	1	.....	8	355,484	2.81
	Totals and averages, .....	.....	39,562	33,350,641	33	5	142	234,864	4.26
1899	Columbia, .....	6	1,346	1,002,469	2	.....	5	200,494	4.99
1900		7	1,163	980,721	3	.....	5	196,144	5.10
1901		5	714	1,209,859	2	.....	4	302,465	3.31
1902		6	1,438	738,070	.....	.....	3	246,023	4.66
1903		5	1,454	1,353,904	.....	.....	3	451,391	2.22
1904		10	1,419	1,151,624	7	.....	10	115,162	8.68
1905		9	1,567	1,229,697	2	.....	7	175,671	5.69
1906		7	1,403	969,065	3	1	7	138,433	7.22
1907		8	1,468	1,188,268	1	.....	4	297,067	3.37
1908		9	1,559	1,182,326	2	.....	5	236,465	4.22
1909		8	1,568	1,093,103	1	.....	2	546,551	1.83
1910		11	1,176	960,145	1	.....	1	960,145	1.04
1911		7	1,473	1,193,736	1	.....	1	1,193,736	.84
1912		11	1,440	1,214,527	3	.....	6	202,421	4.94
	Totals and averages, .....	.....	19,188	15,467,514	28	1	63	245,516	4.07
1899	Dauphin, .....	2	1,583	817,328	1	.....	8	102,166	9.79
1900		2	1,608	779,135	2	1	8	97,392	10.27
1901		2	1,562	830,572	3	.....	7	118,653	8.43
1902		2	1,120	423,341	.....	.....	1	423,341	2.36
1903		2	1,256	732,970	3	.....	5	146,594	6.82
1904		9	1,269	723,414	.....	1	*11	65,765	15.21
1905		10	1,350	723,126	1	1	5	144,625	6.91
1906		10	1,422	734,723	3	.....	3	244,903	4.08
1907		12	1,393	829,980	2	.....	5	165,996	6.02
1908		12	1,481	848,005	1	.....	9	94,223	10.61
1909		12	1,419	932,393	1	.....	2	416,197	2.15
1910		11	1,446	886,192	1	.....	8	110,774	9.03
1911		11	1,530	946,963	4	1	10	94,696	10.56
1912		10	1,606	945,102	.....	1	3	315,034	3.17
	Totals and averages, .....	.....	20,045	11,153,244	22	5	85	131,215	7.62
1899	Susquehanna, .....	2	941	659,020	.....	.....	.....	.....	.....
1900		2	904	556,003	.....	.....	.....	.....	.....
1901		2	1,104	743,105	.....	.....	.....	.....	.....
1902		2	1,086	452,758	2	.....	2	226,378	4.42
1903		2	1,064	800,773	4	.....	6	133,462	7.49
1904		2	1,102	692,440	2	.....	6	115,407	8.67
1905		2	1,026	680,146	6	.....	6	113,358	8.82
1906		3	1,028	562,103	2	.....	6	93,684	10.67
1907		3	970	644,088	4	.....	12	54,674	18.63
1908		1	1,005	487,900	.....	.....	2	243,950	4.10
1909		2	953	589,875	.....	.....	3	196,612	5.09
1910		2	971	628,808	4	.....	4	157,292	6.35
1911		3	962	672,600	.....	.....	1	672,600	1.49
1912		3	1,044	582,510	3	.....	7	83,216	12.02
	Totals and averages, .....	.....	14,160	8,792,089	31	.....	55	159,856	6.20

\*Williamstown disaster.

TABLE 8.—Continued

Years	Counties	Number of mines	Number of inside employes	Production in tons of 2,000 pounds	Fatal accidents by falls	Fatal accidents by explosions of gas	Total fatal accidents inside	Production in tons per fatal accident inside	Lives lost per 1,000,000 tons produced
1899	Sullivan, .....	2	322	183,182	1	.....	1	183,182	5.46
1900		2	337	2,511,212	3	.....	3	78,371	12.76
1901		2	281	152,505	.....	.....	.....	.....	.....
1902		3	523	499,017	3	.....	5	81,808	12.23
1903		3	455	293,442	12	.....	12	146,721	6.82
1904		3	443	294,305	1	.....	1	294,305	3.40
1905		4	371	310,496	1	.....	1	155,248	6.44
1906		4	414	358,627	1	.....	2	179,313	5.58
1907		4	459	433,101	1	.....	1	433,101	2.31
1908		4	583	550,712	12	.....	12	275,356	3.63
1909		4	661	641,216	12	.....	12	320,608	3.12
1910		4	614	632,874	.....	.....	1	632,874	1.58
1911		4	662	717,429	12	.....	4	179,357	5.60
1912	4	677	619,235	.....	.....	.....	.....	.....	
Totals and averages,...		.....	6,762	5,861,253	19	.....	26	225,433	4.44
1899	Wayne, .....	1	353	309,069	.....	.....	.....	.....	.....
1900		1	11	21,862	.....	.....	.....	.....	.....
1901		1	589	369,462	.....	.....	.....	.....	.....
1902		.....	.....	.....	.....	.....	.....	.....	.....
1903		1	125	68,895	.....	.....	.....	.....	.....
1904		1	175	71,353	.....	.....	.....	.....	.....
1905		1	136	67,008	.....	.....	.....	.....	.....
1906		3	202	71,331	.....	.....	.....	.....	.....
1907		3	270	85,594	.....	.....	.....	.....	.....
1908		2	212	63,906	.....	.....	.....	.....	.....
1909		2	184	50,339	.....	.....	.....	.....	.....
1910		2	125	51,576	.....	.....	.....	.....	.....
1911		2	84	70,150	1	.....	1	70,150	14.26
1912	2	129	92,843	.....	.....	.....	.....	.....	
Totals and averages,...		.....	2,545	1,393,438	1	.....	1	1393,438	.72

TABLE 9.—Number of miners and miners' laborers employed in the mines; number killed and ratio of each class killed per 1,000 employed; average number of days worked by breakers, average production per day worked by breakers, 1881-1912, inclusive

Years	Number of miners employed	Number of miners killed	Number of miners killed per 1,000 employed	Number of miners' laborers employed	Number of miners' laborers killed	Number of miners' laborers killed per 1,000 employed	Average number of days worked by breakers	Average production per day worked by breakers, net tons
1881, .....	22,809	114	4.99	16,726	70	4.19	221	154,763
1882, .....	22,543	135	5.91	15,229	56	3.68	218	160,814
1883, .....	25,319	136	5.37	16,879	67	3.97	232	162,704
1884, .....	27,100	132	4.87	19,606	81	4.13	192	189,941
1885, .....	28,305	160	5.65	20,128	86	4.27	204	187,413
1886, .....	25,970	131	5.04	17,068	68	3.98	196	198,728
1887, .....	29,558	102	3.45	17,548	57	3.25	208	202,675
1888, .....	34,547	169	4.89	21,952	87	3.96	218	213,922
1889, .....	30,504	194	6.36	19,368	79	4.08	197	221,978
Totals and averages, .....	246,955	1,273	5.15	164,504	651	3.96	210	188,104
1890, .....	28,936	146	5.05	18,620	95	5.10	210	214,220
1891, .....	30,552	180	5.89	19,590	119	6.07	213	233,340
1892, .....	30,779	180	5.81	22,110	111	5.02	202	253,599
1893, .....	32,881	195	5.93	22,853	108	4.73	202	261,590
1894, .....	33,357	218	6.54	23,942	91	3.80	175	291,240
1895, .....	34,553	179	5.18	24,638	115	4.67	187	304,539
1896, .....	37,003	204	5.51	26,530	134	5.09	170	316,725
1897, .....	36,932	210	5.69	27,277	99	3.63	151	348,219
Totals and averages, .....	264,993	1,512	5.71	185,560	872	4.70	189	277,934
1898, .....	36,377	176	4.84	24,060	124	5.15	151	349,753
1899, .....	36,421	199	5.46	23,946	114	4.75	179	338,091
1900, .....	36,832	184	4.99	24,613	95	3.86	176	327,928
1901, .....	37,804	224	5.92	26,265	122	4.64	195	344,075
1902, .....	36,392	114	3.13	25,443	62	2.44	*116	1356,387
1903, .....	36,823	204	5.49	27,733	110	4.00	211	356,552
1904, .....	39,848	233	5.85	31,217	145	4.64	213	345,513
1905, .....	42,078	308	7.32	31,967	148	4.63	208	378,111
1906, .....	41,801	226	5.41	29,672	133	4.48	206	350,192
1907, .....	43,035	309	7.18	29,984	136	4.54	227	379,103
1908, .....	44,340	313	7.05	32,853	154	4.68	211	345,940
1909, .....	44,675	264	5.91	32,292	126	3.91	205	391,336
1910, .....	43,651	254	5.82	32,040	147	4.59	212	391,736
1911, .....	45,324	306	6.75	32,905	176	5.35	234	388,535
1912, .....	44,696	262	5.86	33,438	117	3.50	220	383,758
Totals and averages, .....	610,097	3,576	5.86	438,148	1,909	4.36	198	361,878

\*Strike during the year.

Washeries worked during the strike. The time was not computed in the average days worked. Note.—There has been a great deal of comment regarding the miners' certificate law enacted in 1889 and amended in 1897, the general opinion being that it would have a tendency to reduce the number of fatalities in the mines.

Table 9 herewith containing statistics from 1881 to 1912 shows the accidents for 9 years prior to 1889 and since that date. No reliable statistics previous to 1881 are available.

In the 9 years prior to the enactment of the law 5.15 miners were killed per 1,000 employed and 3.96 miners' laborers per 1,000 employed.

In the 8 years following 1889, 5.71 miners and 4.70 miners' laborers were killed per 1,000 employed.

The law was amended in 1897 and for the succeeding 15 years up to 1912, the fatalities among the miners numbered 5.86 per 1,000 employed and among the miners' laborers 4.36, a total of 10.22 for every 1,000 employed.

It is evident that more lives were lost among miners following the introduction of the certificate law than before. The number in 1881-1889 was 5.15 per 1,000 employees, and in the years 1890-1912, it was 5.78, an increase of .63 per 1,000 employed.

The fatalities among miners' laborers, who are under the care of the miners, have increased from 3.96 per 1,000 employed to 4.36, a difference of .40.

Since 1889, the miners are supposed to have passed an examination proving their capability and intelligence before being granted certificates. The fatalities among miners and miners' laborers have been on the increase since the increase in the number of inspectors. Up to the year 1902 there were only 8 inspectors in the anthracite region. In 1903 the number was increased to 15, in 1906 to 20 and in 1911 to 21. There are now probably about three times as many inspections made of the mines as were made when there were only 8 inspectors in the service, but the fatal accidents seem to be on the increase among the miners and also among the laborers, notwithstanding the miners' certificate law in force and the increased number of inspectors.

TABLE 10.—Number of employees inside and outside the mines, number of fatal accidents per 1,000 employees, number of tons of coal mined per fatal accident, 1881-1912, inclusive

Years	Inside				Outside			Number of lives lost inside and outside per 1,000 employees
	Employees	Fatal accidents	Lives lost per 1,000 employees	Production of coal in tons of 2,000 pounds for each life lost	Employees	Fatal accidents	Lives lost per 1,000 employees	
1881, .....	45,619	234	5.13	146,165	30,412	39	1.28	3.59
1882, .....	50,764	254	4.92	140,280	31,436	41	1.30	3.54
1883, .....	56,268	274	4.87	137,764	35,153	49	1.39	3.53
1884, .....	61,922	286	4.62	137,513	39,151	46	1.17	3.28
1885, .....	62,991	290	4.61	131,334	37,419	42	1.12	3.31
1886, .....	63,930	236	3.69	165,046	39,114	43	1.10	2.71
1887, .....	67,716	270	3.99	156,163	38,801	46	1.19	2.97
1888, .....	78,688	317	4.03	147,114	43,530	47	1.08	2.98
1889, .....	74,178	339	4.57	128,763	45,468	58	1.28	3.32
Totals and averages, .....	561,986	2,500	4.45	142,287	340,484	411	1.21	3.23
1890, .....	73,613	323	4.39	139,276	46,306	55	1.19	3.15
1891, .....	76,569	372	4.86	131,606	46,739	56	1.20	3.47
1892, .....	82,088	361	4.40	141,903	48,212	57	1.18	3.21
1893, .....	86,287	388	4.49	136,188	51,682	68	1.32	3.30
1894, .....	87,901	368	4.19	138,497	52,038	78	1.50	3.19
1895, .....	89,251	354	3.97	160,872	54,454	67	1.23	2.93
1896, .....	94,798	430	4.54	175,217	55,290	72	1.30	3.34
1897, .....	95,812	372	3.88	141,347	53,745	51	.95	2.83
1898, .....	91,171	360	3.95	146,674	51,249	51	.99	2.89
1899, .....	92,167	389	4.22	155,574	48,437	72	1.49	3.28
Totals and averages, .....	869,657	3,717	4.27	141,915	507,752	627	1.23	3.15
1900, .....	94,140	358	3.80	160,233	49,684	53	1.07	2.86
1901, .....	98,434	441	4.48	152,142	49,217	72	1.46	3.47
1902, .....	98,377	245	*2.49	168,739	49,762	55	1.11	2.03
1903, .....	102,055	426	4.17	176,602	49,772	92	1.85	3.41
1904, .....	110,362	496	4.49	148,376	50,968	99	1.94	3.69
1905, .....	116,371	551	4.73	142,735	51,881	93	1.79	3.83
1906, .....	114,998	456	3.97	141,238	51,177	101	1.98	3.35
1907, .....	117,849	601	5.10	143,189	50,925	107	2.10	4.20
1908, .....	114,233	596	4.79	140,173	50,270	82	1.63	3.88
1909, .....	123,272	490	3.98	163,722	47,923	77	1.61	3.31
Totals and averages, .....	1,100,091	4,660	4.24	153,717	501,581	821	1.66	3.43
1910, .....	121,542	509	4.19	164,409	46,623	99	1.97	3.57
1911, .....	126,087	615	4.88	147,823	47,391	84	1.78	4.03
1912, .....	127,807	498	3.90	169,732	47,291	103	2.18	3.43
Totals and averages, .....	375,336	1,622	4.3	160,591	141,225	279	1.97	3.68

\*Year of the big strike, when an average of only 116 days was worked by the collieries.



TABLE 11—Comparison of production and fatal accidents inside, 1908-1912, inclusive

Names of Companies	1908		1909		1910		1911		1912		Total production in tons of 2,000 pounds	Total number of fatal accidents inside	Number of tons produced per life lost	Fatal accidents per 1,000,000 tons produced
	Production in tons of 2,000 pounds	Number of fatal accidents inside	Production in tons of 2,000 pounds	Number of fatal accidents inside	Production in tons of 2,000 pounds	Number of fatal accidents inside	Production in tons of 2,000 pounds	Number of fatal accidents inside	Production in tons of 2,000 pounds	Number of fatal accidents inside				
Philadelphia and Reading Coal and Iron Co.	11,929,856	80	11,356,043	66	11,093,293	61	12,368,179	62	12,374,472	71	58,971,813	340	173,447	5.77
Delaware, Lackawanna and Western Railroad Co.	9,730,257	61	9,246,954	56	9,436,290	62	9,840,388	51	9,532,471	59	47,766,389	297	160,830	6.22
Idaho Valley Coal Co.	6,588,745	36	6,255,728	37	7,436,080	43	9,000,559	44	8,188,891	54	37,470,413	238	157,481	6.35
Delaware and Hudson Co.	5,446,772	36	5,112,659	25	6,608,516	36	6,746,076	13	9,233,321	33	33,942,329	183	179,466	5.57
Pennsylvania Coal Co.	5,146,193	38	5,132,452	46	5,618,507	41	6,101,405	38	5,448,395	31	27,760,352	197	140,865	7.10
Lehigh and Wilkes-Barre Coal Co.	5,092,180	29	4,736,382	24	4,944,869	33	5,534,611	33	5,107,338	36	25,946,627	181	143,346	6.98
Lehigh Coal and Navigation Co.	3,320,421	12	3,370,889	20	4,148,468	22	4,539,754	22	4,114,818	15	19,571,320	91	215,069	4.65
Totals and averages	49,543,823	314	46,436,778	282	49,246,573	315	54,130,942	314	50,970,138	372	259,318,264	1,527	163,928	6.10
Scranton Coal Co.	2,786,801	23	2,628,614	24	2,651,731	18	2,342,864	23	2,196,311	20	12,006,321	108	116,725	8.57
Kingston Coal Co.	2,392,556	13	2,281,692	15	2,500,088	16	2,461,464	13	2,168,780	11	11,613,230	61	190,873	3.24
Susquehanna Coal Co.	3,235,038	41	1,745,593	13	1,893,173	13	2,462,020	19	1,930,162	11	10,754,996	86	135,065	8.00
Hudson Coal Co.	7,066,708	7	1,410,354	8	1,707,011	8	2,400,859	14	2,256,010	15	8,391,711	52	165,255	6.05
Hillside Coal and Iron Co.	1,239,576	10	1,433,103	8	1,555,100	8	2,014,360	18	1,621,639	9	8,250,825	43	191,880	5.21
Mineral Railroad and Mining Co.	593,131	8	1,770,194	24	1,791,666	19	2,014,048	18	1,971,639	10	7,166,964	72	113,460	8.82
Coxe Brothers and Co., Incorporated.	1,479,828	9	1,154,275	5	1,371,570	7	1,644,465	7	1,513,312	6	7,166,010	29	247,104	4.05
G. B. Markle Co.	1,155,325	9	1,256,820	8	1,214,764	7	1,394,365	6	1,245,604	6	6,234,468	34	173,180	5.77
Totals and averages	13,879,541	120	13,730,645	105	14,634,602	77	16,181,756	99	14,987,978	86	73,414,535	487	150,749	6.73
Summit Branch Mining Co.	848,065	9	932,393	2	886,192	8	946,963	10	945,102	3	4,558,655	32	142,458	7.02
Temple Iron Co.	986,912	20	1,967,740	15	1,016,297	11	*	.....	*	.....	3,770,979	40	86,336	11.58
Price-Pancoat Coal Co.	730,872	7	785,267	6	800,416	7	845,187	80	655,179	4	3,732,534	101	36,939	32.06
West End Coal Co.	808,891	8	696,571	5	735,833	4	701,867	3	597,588	2	3,681,040	31	118,840	8.41
Jermyn and Co.	648,244	7	854,701	6	725,134	8	701,867	3	562,318	2	2,492,264	30	116,469	8.39

\*Now Forty Fort Coal Co., and Mt. Lookout Coal Co.

Pardee Brothers and Co., .....	3	550,305	3	703,957	1	755,284	.....	653,322	3	3,255,192	10	323,519	3.10
A. Pardee and Co., .....	4	613,467	2	578,135	4	634,638	.....	1	3	3,023,018	13	232,540	4.30
St. Clair Coal Co., .....	1	477,780	1	486,821	3	439,807	.....	3	1	2,896,928	8	290,616	3.34
Parrish Coal Co., .....	1	451,012	1	486,878	9	3,0,087	.....	4	1	2,851,130	26	90,813	11.01
Mutual Valley Coal Co., .....	3	329,452	1	396,833	.....	421,079	.....	1	3	2,020,587	7	288,712	8.46
Totals and averages, .....	65	7,718,779	44	6,825,049	55	5,929,092	106	5,285,815	34	32,406,017	304	106,796	9.36
Plymouth Coal Co., .....	8	403,550	4	387,474	4	386,600	1	361,497	3	1,963,568	20	98,178	10.18
Little Coal Co., .....	3	357,511	1	387,819	3	382,783	1	369,630	3	1,929,828	12	160,777	6.22
Lebanon Coal Co., Limited, .....	6	362,122	1	349,016	3	340,115	3	338,319	3	1,899,915	16	118,745	8.42
Thomas Colliery Coal Co., .....	6	362,576	1	356,242	1	393,488	3	361,015	1	1,882,894	14	134,462	7.41
Stoddard Creek Coal Co., .....	8	691,687	1	443,981	1	631,043	3	614,115	3	1,836,825	12	153,069	6.53
Mill Creek Coal Co., .....	3	731,700	1	443,981	2	133,358	1	113,235	1	1,600,817	17	103,980	9.44
C. M. Deason and Co., .....	3	572,376	2	443,981	1	469,282	1	363,970	1	1,729,447	10	172,945	5.78
Estato A. S. Van Winkle, .....	1	368,012	2	391,605	1	948,104	1	287,805	1	1,712,245	7	244,606	4.08
Allen Coal Co., .....	3	391,582	1	391,350	2	388,164	1	298,767	1	1,629,244	7	814,622	1.83
Allen Coal Co., .....	3	391,612	1	391,350	1	347,477	1	298,767	1	1,629,244	7	814,622	1.83
Pine Hill Coal Co., .....	3	391,612	1	391,350	1	347,477	1	298,767	1	1,629,244	7	814,622	1.83
Cumell Anthracite Mining Co., .....	3	391,612	1	391,350	1	347,477	1	298,767	1	1,629,244	7	814,622	1.83
Elliot McChure and Co., .....	3	391,612	1	391,350	1	347,477	1	298,767	1	1,629,244	7	814,622	1.83
Oak Hill Coal Co., .....	3	391,612	1	391,350	1	347,477	1	298,767	1	1,629,244	7	814,622	1.83
Totals and averages, .....	40	3,975,681	18	4,198,714	18	4,899,712	37	4,238,293	2	22,613,798	147	151,039	6.49
Excelsior Coal Co., .....	1	282,187	1	299,163	1	319,511	3	295,958	1	1,463,611	7	200,092	4.78
Greenwood Red Ash Coal Co., .....	1	262,025	1	277,339	3	298,081	1	233,455	1	1,844,761	6	234,127	4.46
Harwood Coal Co., .....	2	274,859	1	230,093	1	298,404	1	216,594	1	1,329,571	4	332,353	3.01
Forty Fort Coal Co., .....	2	253,015	1	289,805	1	271,333	4	591,242	3	1,818,365	7	188,383	5.31
Bedson Coal Co., .....	2	251,934	1	241,834	2	244,688	2	274,202	1	1,224,333	6	188,103	5.46
Red Ash Coal Co., .....	2	251,934	1	241,834	2	244,688	2	274,202	1	1,224,333	6	204,064	4.90
Colonial Collieries Co., .....	3	267,583	3	267,583	2	193,583	2	365,576	2	1,179,899	3	165,556	5.93
Maryd Coal Co., .....	1	285,260	1	285,080	1	174,541	2	276,868	2	1,173,752	3	392,519	2.56
ML Jessup Coal Co., .....	1	188,626	1	248,365	1	802,302	1	269,107	2	1,173,752	3	493,483	3.41
Back Run Coal Co., .....	3	184,217	1	204,904	1	301,315	2	269,107	2	1,173,752	3	189,648	5.27
Enterprise Coal Co., .....	3	135,996	1	245,184	.....	271,797	2	243,73	2	1,128,740	6	374,580	2.67
Lantz Coal Co., .....	3	304,489	2	480,202	2	172,401	.....	151,679	.....	1,119,031	3	228,816	4.47
Upper Lehigh Coal Co., .....	3	280,588	1	226,272	.....	172,401	.....	151,679	.....	1,119,031	3	346,237	2.89
Totals and averages, .....	11	2,832,414	9	3,334,403	15	3,437,079	16	3,476,136	14	15,913,078	68	231,016	4.27
Northwest Coal Co., .....	4	212,780	1	188,088	1	221,703	1	190,376	.....	990,824	7	142,832	7.00
Silipah Coal Co., .....	1	173,893	2	247,720	3	234,813	1	191,455	1	960,784	8	121,238	8.25
Dolph Coal Co., Limited, .....	1	163,322	1	191,453	.....	186,944	.....	192,457	.....	949,764	1	194,764	1.05
Mosier Mountain Coal Co., .....	1	174,398	1	191,453	.....	229,376	3	225,478	.....	868,779	6	156,463	6.39
Northern Anthracite Coal Co., .....	2	213,200	1	191,453	1	189,191	3	225,478	.....	919,839	6	153,306	6.32
East Boston Coal Co., .....	1	193,106	1	191,453	.....	193,191	3	225,478	.....	894,065	4	223,516	4.47
People's Coal Co., .....	2	192,596	1	191,453	.....	187,065	2	180,336	.....	868,889	10	53,993	18.32
General Mammoth Coal Co., .....	2	192,596	1	191,453	.....	187,065	2	180,336	.....	868,889	10	202,410	4.32
Hazle Mountain Coal Co., .....	1	183,401	.....	182,149	.....	172,565	1	117,946	.....	813,683	4	276,285	3.62
Totals and averages, .....	15	1,599,057	13	1,715,290	8	1,822,556	12	1,505,542	7	8,178,34	53	148,659	6.73

Operated by Temple Iron Co.

Now Lehigh Valley Coal Co.

TABLE 11—Continued

Names of Companies	1908		1909		1910		1911		1912		Total production in tons of 2,000 pounds	Total number of fatal accidents inside	Number of tons produced per life lost	Fatal accidents per 1,000,000 tons produced
	Production in tons of 2,000 pounds	Number of fatal accidents inside	Production in tons of 2,000 pounds	Number of fatal accidents inside	Production in tons of 2,000 pounds	Number of fatal accidents inside	Production in tons of 2,000 pounds	Number of fatal accidents inside	Production in tons of 2,000 pounds	Number of fatal accidents inside				
Ramb Coal Co., .....	131,966	.....	116,922	1	150,948	1	162,621	.....	154,391	1	719,848	3	239,949	4.17
Mt. Lookout Coal Co., .....	**	.....	**	.....	**	.....	287,993	.....	319,840	3	707,833	10	70,783	14.13
W. R. McCurtz Co., .....	148,702	.....	152,232	.....	115,557	.....	147,293	.....	137,898	.....	686,782	.....	348,391	2.87
John S. Wentz and Co., .....	150,336	.....	157,373	1	130,428	.....	136,359	1	127,963	.....	691,629	3	230,543	4.34
Green Ridge Coal Co., .....	132,415	.....	133,404	.....	145,910	.....	132,871	.....	111,133	.....	659,663	3	131,953	7.58
Truman S. Dodson Coal Co., .....	169,579	.....	230,252	1	220,750	2	11	.....	11	.....	610,681	5	122,136	8.19
Buck Ridge Coal Mining Co., .....	45,568	.....	143,072	.....	152,334	.....	158,770	.....	98,715	.....	601,459	3	200,486	4.99
Buck Ridge Coal Mining Co., .....	115,688	1	106,702	.....	93,292	1	148,611	.....	133,233	.....	600,626	3	300,313	3.35
M. S. Kummerer and Co., .....	106,833	.....	104,938	.....	108,403	.....	142,521	.....	135,761	.....	598,258	1	598,258	1.67
O'Boyle-Foy Anthracite Coal Co., .....	271,345	.....	96,361	2	148,440	3	56,730	.....	6,820	.....	579,696	12	48,308	20.70
Clear Spring Coal Co., .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals and averages, .....	1,278,862	11	1,231,326	5	1,256,062	7	1,474,771	13	1,253,451	10	6,466,475	46	140,575	7.11
Miscellaneous Companies, .....	2,231,155	11	2,328,583	14	2,238,990	14	2,337,069	18	2,161,708	17	11,800,505	74	139,406	6.28

\*\*Now Alliance Coal Co.

NOTE.—This table shows the standing of each company in the matter of accidents. It covers a period of five years, a sufficiently long period to make fair comparisons. Conditions, of course, are more favorable for some companies than for others, a point to be borne in mind. During these years only two companies have had exceptionally severe catastrophes. The Price-Pancoat Coal Company had a mine fire in 1911 by which 73 lives were lost, and the Mount Lookout Coal Company had an explosion of gas by which 12 lives were lost.

Without naming any particular company, it may be said that when a company produces 1,000,000 tons of coal with the loss of not more than 6 lives, the record is about as good as can be expected. A company in a dangerous belt that loses not more than 4 lives in producing the same tonnage, possibly uses more care in mining operations than some other companies that lose not more than 4 lives in producing the same tonnage, but who are mining in a less dangerous belt. The true conditions in the several fields must be understood in order to pass fair judgment. Some companies, although in favorable localities, have lost from 8 to 10 lives for every 1,000,000 tons produced. It is to be hoped that these companies will study this table and endeavor during the next five years to reduce the fatalities. If the employer and the employee use proper effort, they can be reduced one-half.

TABLE 12—Companies that had no fatal accidents, 1908-1912, inclusive

Names of Companies	1908	1909	1910	1911	1912
	Production in 2,000 tons of	Production in 2,000 tons of	Production in 2,000 tons of	Production in 2,000 tons of	Production in 2,000 tons of
Rissinger Brothers and Co., Incorporated, .....	†	†	†	24,064	97,064
E. S. Stackhouse Coal Co., .....				55,851	92,444
Humbert Coal Co., .....	73,294	21,857	54,033	86,363	81,628
Schuylkill Lehigh Coal Co., .....				19,301	61,398
Wolf Coal Co., .....				67,728	44,521
John H. Davis Coal Co., .....	36,191	32,651	40,451	38,278	53,431
Pittston Coal Mining Co., .....	72,643	91,946	99,929	61,029	31,172
Bright Coal Co., .....	5,376	1,000	14,333	18,474	20,916
Premier Coal Co., .....					*16,099
Yost Mining Co., .....	†	†	15,624	31,902	14,804
Wilkes-Barre Colliery Co., .....					*12,402
Lincoln Hill Coal Co., .....				6,571	11,746
McCauley Coal Co., .....				3,166	11,389
Wachua-Taylor Anthracite Coal Co., .....					10,489
Carlton Coal Co., .....				476	8,666
Thomas R. Reese and Son, .....	4,517	6,237	4,021	5,821	6,225
Number Six Coal Co., .....					*4,896
Moosie Coal Co., .....				1,959	4,174
Scott Estate, .....	†	†	\$3,599	\$2,212	3,371
Dreshman Coal Co., .....	3,283	2,849	2,409	5,814	768
Koehler Coal Co., .....					*292

\*New operation.

‡Formerly Black Heath Co.

†Not reported.



TABLE 13.—Table showing the average number of days worked by breakers, total production and average production per day for the years 1899-1912, inclusive

Years	Average number of days worked	Production in tons of 2,000 pounds	Average production per day	Production from washeries (net tons)
1899, .....	179	60,518,331	338,119	1,055,425
1900, .....	176	57,363,396	325,928	1,818,170
1901, .....	185	67,094,665	344,075	2,009,864
1902, .....	*116	41,340,937	†356,387	2,965,792
1903, .....	211	75,237,585	356,553	4,119,258
1904, .....	213	73,594,369	345,513	3,440,420
1905, .....	268	78,647,020	378,111	3,897,688
1906, .....	266	72,139,510	350,192	4,880,402
1907, .....	227	86,056,412	379,163	5,630,169
1908, .....	211	83,743,243	395,939	4,635,923
1909, .....	205	80,123,873	391,336	5,206,562
1910, .....	212	83,683,994	394,736	5,412,167
1911, .....	231	90,917,176	393,535	4,555,457
1912, .....	220	84,426,869	383,758	4,317,161

\*Strike during the year.

†Washeries worked during the strike. The time was not computed in the average days worked.

Note.—This table shows the constant decrease in the production from breakers, exclusive of the washeries, from 1906 to 1912.

In 1908 the production was 395,939 short tons for each day worked; in 1909, 391,336 short tons; in 1910, 394,736 short tons; in 1911, 393,535 short tons; in 1912, 383,758 short tons. This reduction can only be accounted for by the inability to obtain workmen.

TABLE AA—Part 1—Number of net tons of coal mined, number of days worked, number of persons employed, number killed and injured, quantity of explosives used, etc., 1899-1912, inclusive

Districts	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employees	Total production in tons of 2,000 pounds	Average number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives			Number of horses and mules
									Number of pounds of powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used	
First.	2,317,101	256,713	23,531	2,597,345	207	5,675	21	28	1,861,250	326,350	28,482	409
Second.	4,582,773	637,012	86,407	5,305,192	201	12,384	36	64	4,818,225	701,957	23,400	1,041
Third.	3,979,625	420,069	158,055	4,558,349	202	10,401	38	70	4,006,125	302,832	47,829	1,932
Fourth.	4,222,737	151,165	188,061	4,561,943	221	8,697	28	50	4,654,295	251,426	.....	698
Fifth.	3,183,873	288,537	50,331	3,507,741	196	6,962	13	23	4,875,778	143,778	36,792	467
Sixth.	4,792,632	481,126	52,679	5,226,737	204	11,411	45	61	4,285,850	299,701	104,721	1,165
Seventh.	5,107,332	590,649	295,192	5,993,173	207	10,902	50	75	3,490,200	437,524	239,732	1,228
Eighth.	3,659,494	518,776	109,876	4,288,146	206	8,229	32	45	2,250,425	977,561	56,972	1,011
Ninth.	5,088,580	469,212	177,458	5,725,250	213	10,551	42	33	3,895,075	207,773	108,782	1,105
Tenth.	4,372,335	408,489	63,618	4,844,642	224	9,728	35	32	3,891,317	821,299	434,263	1,681
Eleventh.	4,972,170	723,317	157,821	5,833,338	228	10,004	29	65	3,831,563	1,880,028	.....	977
Twelfth.	2,672,191	401,734	56,534	3,130,450	216	7,295	37	27	1,213,700	501,718	32,222	575
Thirteenth.	2,530,033	347,690	82,715	2,960,338	237	7,619	20	22	2,485,825	487,506	111,138	591
Fourteenth.	2,964,333	445,661	54,271	3,414,295	201	6,846	26	56	2,655,525	953,534	135,181	569
Fifteenth.	2,883,168	332,594	160,674	3,276,376	224	7,256	21	33	3,713,025	1,264,015	26,040	606
Sixteenth.	2,686,738	379,186	80,265	3,126,189	229	7,293	19	61	1,430,475	353,379	142	672
Seventeenth.	3,967,954	538,291	198,518	4,694,703	254	9,691	26	37	84,275	1,553,398	.....	429
Eighteenth.	2,598,819	316,260	39,205	2,984,284	218	6,563	16	56	406,783	939,299	125,791	566
Nineteenth.	2,946,336	516,812	42,191	3,505,339	241	7,515	32	48	421,600	709,006	326,239	611
Twentieth.	2,113,267	452,813	43,289	2,609,759	217	5,987	12	50	370,227	525,419	59,970	539
Twenty-first.	1,825,463	148,793	38,315	2,012,571	213	3,749	11	19	1,450,875	116,439	89,880	315
Totals, 1912.	73,462,014	8,804,759	2,160,096	84,426,869	220	175,098	601	976	41,401,015	13,685,062	2,037,026	15,187



TABLE AA—Part 2, 1912

Districts	Boilers				Locomotives			Number of steam engines of all classes	Total horse power	Number of pumps delivering water to surface	Capacity in gallons per minute	Quantity delivered to surface per minute—gallons	Number of electric dynamos	Number of air compressors	
	Cylindrical	Horse power	Tubular	Horse power	Total horse power	Locomotives									
						Steam	Air								Electric
First, .....	19	571	75	11,440	12,011	16	.....	49	180	11,836	43	60,933	15	9	
Second, .....	71	2,528	142	27,120	29,648	38	59	38	382	33,302	59	59,370	29	24	
Third, .....	35	3,829	97	17,445	19,774	15	.....	41	256	18,929	37	25,406	17	10	
Fourth, .....	47	3,622	74	18,627	21,649	12	.....	84	209	25,010	40	43,959	22	5	
Fifth, .....	4	1,220	101	15,370	15,589	12	.....	69	197	14,013	36	49,346	7	2	
Sixth, .....	4	1,000	170	20,001	30,001	18	12	51	440	30,069	47	55,430	12	22	
Seventh, .....	21	567	147	31,422	31,989	29	14	18	536	52,337	47	40,577	14	30	
Eighth, .....	25	240	128	30,206	30,446	14	6	29	316	28,971	63	58,248	19	14	
Ninth, .....	36	1,658	139	28,415	30,073	14	5	13	432	42,360	97	47,113	14	12	
Tenth, .....	33	1,155	93	24,670	25,825	27	15	71	331	29,752	42	37,222	19	25	
Eleventh, .....	32	1,060	253	50,241	51,325	89	11	26	437	46,462	95	109,176	13	25	
Twelfth, .....	.....	.....	149	21,550	21,550	18	15	14	319	46,657	29	56,722	3	15	
Thirteenth, .....	.....	.....	174	23,525	23,525	32	5	5	321	31,802	27	37,876	3	15	
Fourteenth, .....	39	1,431	156	25,467	26,898	46	5	58	335	35,706	46	53,778	6	10	
Fifteenth, .....	12	360	132	18,342	19,702	17	4	14	240	29,563	36	44,239	7	13	
Sixteenth, .....	16	512	140	18,767	19,579	22	.....	12	283	28,423	43	42,824	8	13	
Seventeenth, .....	3	186	169	33,861	34,047	48	.....	59	266	41,966	34	57,890	10	18	
Eighteenth, .....	41	1,390	191	26,625	28,015	34	8	9	248	34,254	49	47,809	8	19	
Nineteenth, .....	7	1,000	162	29,255	29,255	36	1	14	393	41,221	45	49,940	10	14	
Twentieth, .....	.....	.....	174	21,675	22,675	16	.....	25	281	38,720	17	31,187	9	13	
Twenty-first, .....	26	812	55	7,200	8,012	12	1	28	144	9,657	22	10,260	9	2	
Totals, .....	473	20,661	2,924	510,628	531,289	575	163	707	6,506	680,700	884	1,024,186	255	371	





TABLE A—Continued

Occupations of Employees	Districts										Grand totals inside and outside
	Twelfth	Thirteenth	Fourteenth	Fifteenth	Sixteenth	Seventeenth	Eighteenth	Nineteenth	Twentieth	Twenty-first	
Inside											
Mine foremen, .....	11	12	26	15	15	20	18	20	12	13	422
Assistant mine foremen, .....	72	66	68	41	47	11	33	54	64	13	877
Fire losses and assistants, .....	10	11	9	33	41	72	29	42	21	13	782
Miners, .....	1,666	1,176	1,054	2,350	2,119	1,641	1,066	1,968	1,433	1,033	44,096
Miners' laborers, .....	1,912	1,166	922	893	829	900	729	913	517	930	33,438
Drivers and runners, .....	332	268	407	238	373	322	289	339	254	242	11,479
Doorboys and helpers, .....	80	35	96	57	56	62	58	52	63	74	2,449
Pumpmen, .....	27	34	53	59	41	31	48	52	40	28	1,177
Company men, .....	859	902	546	472	523	2,225	692	821	461	181	15,627
All other employees, .....	1,068	852	1,222	1,007	1,017	1,223	955	826	1,426	542	16,860
Totals, .....	5,127	4,522	4,234	5,237	5,130	6,510	4,497	5,078	4,315	2,756	127,807
Outside											
Superintendents, .....	1	6	5	4	4	6	13	11	8	10	136
Foremen, .....	19	26	24	16	17	21	24	27	14	10	419
Blacksmiths and carpenters, .....	82	131	150	115	103	273	127	117	111	60	3,071
Engineers and firemen, .....	288	333	342	304	289	433	320	359	294	110	6,431
Statepickers (boys), .....	530	331	273	429	355	220	250	312	135	135	6,481
Statepickers (men), .....	91	108	83	69	186	150	98	113	50	97	3,131
Bookkeepers and clerks, .....	43	55	37	45	122	49	38	73	29	22	859
All other employees, .....	1,251	1,474	1,698	1,037	1,151	1,993	1,236	1,883	1,019	548	26,733
Totals, .....	2,108	2,497	2,612	2,019	2,103	3,181	2,006	2,437	1,672	933	47,991
Grand totals inside and outside, .....	7,235	7,019	6,846	7,256	7,233	9,691	6,503	7,515	5,987	3,749	175,098

Note.—Attention is called to the fact that of the 175,098 employees inside and outside the anthracite mines, 127,807 or 72.99 per cent. were employed inside and 47,291 or 27.01 per cent. outside.

Of the 127,807 inside employees, 41,636 or 34.97 per cent. were miners; 33,438 or 26.16 per cent. were miners' laborers, and 11,470 or about 9 per cent. were drivers and runners.

Of the total number of employees, only 25.52 were miners.

TABLE B—Causes of fatal accidents inside and outside the mines, and number attributable to each cause: number of wives made widows and children made orphans by reason of such accidents, 1912

Causes of Fatal Accidents	Districts												
	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	Ninth	Tenth	Eleventh	Twelfth	Thirteenth
Sixteenth													
Fifteenth													
Fourteenth													
Thirteenth													
Twelfth													
Eleventh													
Tenth													
Ninth													
Eighth													
Seventh													
Sixth													
Fifth													
Fourth													
Third													
Second													
First													
Totals, .....													
Totals, .....													
Outside													
CARS, .....													
Machinery, .....													
Suffocation in chutes, etc., .....													
Boiler explosions, .....													
Electricity, .....													
Miscellaneous, .....													
Totals, .....													
Grand totals inside and outside, .....													
Totals, .....													
Grand totals inside and outside, .....													

Widows, 395.  
Orphans, 393.

TABLE B—Continued

Causes of Fatal Accidents	Districts						Percentages for 1904							
	Seventeenth	Eighteenth	Nineteenth	Twentieth	Twenty-first	Totals	Percentages for 1905	Percentages for 1906	Percentages for 1907	Percentages for 1908	Percentages for 1909	Percentages for 1910	Percentages for 1911	Percentages for 1912
Inside														
Falls of coal, slate and roof, .....	2	10	17	2	5	246	49.40	41.14	49.71	51.84	47.65	46.42	46.93	47.98
Mine cars, .....	7	1	3	.....	.....	78	15.66	14.96	18.07	14.49	15.10	14.64	14.69	14.31
Explosions of gas, .....	.....	.....	.....	1	.....	35	7.03	5.53	3.93	5.71	9.56	7.32	9.43	5.99
Smothering by gas, etc., .....	.....	.....	1	1	.....	5	1.01	13.98	2.75	3.47	6.7	3.33	1.53	1.81
Explosions of powder and dynamite, .....	.....	.....	.....	1	1	25	5.02	3.42	4.32	4.49	3.86	2.83	5.14	2.91
Blasts, premature and otherwise, .....	2	.....	1	3	2	51	10.24	10.89	11.79	9.59	11.68	11.62	11.62	7.99
Falling into shafts, slopes, etc., .....	.....	1	1	1	.....	18	3.61	3.42	3.73	3.67	3.69	4.16	4.39	6.86
Crushed at batteries, .....	.....	.....	.....	.....	.....	4	.80	.81	.59	.82	.34	.44	.33	7.80
Run over by mules, etc., .....	.....	.....	1	.....	.....	2	.40	.49	.20	1.33	.67	.66	.61	5.24
Knocked by mules, etc., .....	.....	.....	.....	.....	.....	.....	.....	.65	.30	.....	.17	.33	.44	1.21
Machinery, .....	.....	.....	.....	.....	1	5	1.01	.35	.59	1.22	.17	.50	.....	1.61
Electricity, .....	.....	.....	4	1	.....	29	5.82	4.39	3.93	3.17	6.54	7.16	.....	1.21
Miscellaneous, .....	3	2	4	1	1	.....	.....	.....	.....	.....	.....	.....	.....	6.65
Totals, .....	17	15	27	10	9	498	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Outside														
Cars, .....	3	.....	2	1	1	41	39.81	39.55	93.48	33.77	42.68	44.86	35.65	43.44
Machinery, .....	.....	.....	4	.....	.....	20	19.42	26.19	27.17	25.97	35.37	27.10	22.77	15.15
Smothering in clutters, etc., .....	1	.....	.....	.....	.....	12	11.65	9.53	2.18	12.99	1.22	2.80	8.91	8.08
Explosions, .....	.....	.....	.....	.....	.....	.....	.....	1.19	.....	.....	1.22	.91	.....	1.08
Electricity, .....	.....	.....	.....	.....	.....	2	1.94	1.19	.....	.....	1.22	1.87	.....	2.02
Miscellaneous, .....	3	1	1	1	1	28	27.18	30.35	27.17	27.27	18.29	22.43	31.68	31.31
Totals, .....	9	1	7	2	2	103	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Grand totals inside and outside, .....	26	16	34	12	11	601	.....	.....	.....	.....	.....	.....	.....	.....



TABLE C—Causes of non-fatal accidents inside and outside the mines, and number attributable to each cause, 1912

Causes of Non-Fatal Accidents	Districts																						Percentages
	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	Ninth	Tenth	Eleventh	Twelfth	Thirteenth	Fourteenth	Fifteenth	Sixteenth	Seventeenth	Eighteenth	Nineteenth	Twentieth	Twenty-first	Totals	
Inside																							
Falls of coal, slate and roof, .....	14	30	24	20	16	15	27	19	6	10	18	7	7	13	9	17	2	11	13	14	8	300	35.59
Mine cars, .....	5	20	16	12	9	16	21	12	7	10	11	1	6	7	6	9	5	8	6	8	2	197	23.37
Explosions of gas, .....	2	4	3	2	10	8	6	2	5	...	6	4	...	11	2	14	5	16	13	5	...	114	13.52
Explosions of powder and dynamite, ..	1	5	4	...	...	...	3	2	3	...	4	4	...	3	1	3	3	...	...	5	2	39	4.63
Blasts, premature and otherwise, .....	1	5	4	7	1	7	7	2	2	1	4	2	...	3	6	3	8	4	3	2	...	74	8.78
Falling into shafts, slopes, etc., .....	...	...	1	...	1	1	...	...	...	...	1	...	...	...	1	1	...	...	...	4	...	10	1.18
Crushed at batteries, .....	...	...	...	...	2	...	...	...	...	...	1	...	...	2	...	...	...	2	...	...	...	5	.59
Kicked by mules, etc., .....	...	...	3	1	2	...	1	...	1	3	...	...	...	1	1	...	...	...	1	...	...	16	1.90
Machinery, .....	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	.12
Electricity, .....	1	...	4	8	2	10	4	3	3	2	6	3	3	4	1	4	6	6	6	8	3	87	10.32
Miscellaneous, .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals, .....	23	61	61	50	41	57	68	39	26	26	51	24	16	42	28	51	29	47	42	46	15	843	100.00
Outside																							
Cars, .....	1	3	5	...	...	1	1	5	3	1	10	...	2	5	...	1	5	4	3	1	2	58	43.61
Machinery, .....	1	...	1	...	1	2	2	...	2	1	1	...	1	3	1	5	1	...	3	...	...	25	18.80
Roller explosions, .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Electricity, .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Miscellaneous, .....	3	...	3	...	5	1	4	1	2	4	3	3	3	6	2	1	2	5	2	1	2	50	37.59
Totals, .....	5	3	9	...	3	4	7	6	7	6	14	3	6	14	5	10	8	9	8	2	4	133	100.00
Grand totals inside and outside, .....	28	64	70	50	44	61	75	45	33	32	65	27	22	56	33	61	37	56	50	48	19	976	...

TABLE D—Number of gaseous and non-gaseous mines in operation, number of foremen, assistants and fire bosses; production and percentage of production in net tons from gaseous and non-gaseous mines and washeries, by districts, 1912

Districts	Gaseous Mines				Non-Gaseous Mines			Production in tons of 2,000 pounds from gaseous mines	Production in tons of 2,000 pounds from non-gaseous mines	Production in tons of 2,000 pounds from washeries	Percentage of production from gaseous mines	Percentage of production from non-gaseous mines	Percentage of production from washeries
	Number of gaseous mines in operation	Number of mine foremen	Number of assistant mine foremen	Number of fire bosses	Number of non-gaseous mines in operation	Number of mine foremen	Number of assistant mine foremen						
First.	1	1	1	.....	23	11	18	58,802	2,397,674	100,869	3.81	92.31	3.88
Second.	22	16	18	60	14	6	12	3,480,300	1,499,128	226,464	65.59	28.26	6.15
Third.	15	19	18	53	17	7	8	3,386,708	910,395	281,246	73.86	19.97	6.17
Fourth.	21	19	13	55	8	2	.....	3,424,374	307,636	829,133	75.06	6.75	18.19
Fifth.	16	9	12	30	17	8	12	2,519,162	817,796	170,783	71.82	23.31	4.87
Sixth.	21	18	37	42	20	12	17	4,079,399	1,247,838	.....	76.58	23.42	.....
Seventh.	45	28	61	71	3	2	2	5,416,291	308,162	268,150	90.37	5.14	4.49
Eighth.	17	19	44	36	12	8	7	3,272,678	759,348	256,120	76.32	17.71	5.97
Ninth.	29	18	26	71	12	3	3	4,915,141	395,543	424,565	85.70	6.90	7.40
Tenth.	34	14	20	78	16	2	4	4,013,523	652,313	178,806	82.84	13.47	3.69
Eleventh.	35	28	48	15	50	10	24	7,140,569	2,598,949	113,850	53.65	44.40	1.95
Twelfth.	19	11	72	10	.....	.....	.....	3,130,459	.....	100.00	.....	.....	.....
Thirteenth.	27	11	65	11	3	1	1	2,436,395	285,370	238,613	82.30	9.64	8.06
Fourteenth.	32	23	65	9	5	3	3	3,373,685	80,610	.....	97.67	2.73	.....
Fifteenth.	11	8	27	33	16	7	17	2,079,993	1,272,496	43,890	61.01	37.69	1.30
Sixteenth.	19	13	53	44	26	2	14	1,137,414	1,187,414	54,973	61.86	36.38	1.76
Seventeenth.	18	9	72	19	2	2	2	3,915,220	295,018	483,465	83.40	6.28	10.32
Eighteenth.	25	15	20	29	20	3	13	2,421,314	562,970	.....	81.14	18.86	.....
Nineteenth.	53	17	43	42	17	3	11	3,093,241	330,752	81,346	88.24	9.44	2.32
Twentieth.	17	12	64	21	.....	.....	.....	.....	.....	316,103	87.89	.....	12.11
Twenty-first.	24	.....	.....	.....	16	13	13	2,293,656	1,865,887	146,654	.....	92.71	7.29
Totals and percentages.	404	317	696	732	314	105	181	62,334,679	17,725,029	4,317,161	73.89	21.00	5.11

TABLE E—Quantity of coal produced by each company that produced 300,000 or more tons, and the number of persons employed, 1912

Names of Companies	Inspection Districts	Production of coal in net tons	Employees
Philadelphia and Reading Coal and Iron Company, .....	Twelfth, Thirtieth, Fourteenth, Fifteenth, Sixteenth, Eighteenth, Nineteenth, Twentieth, .....	12,354,472	28,291
Delaware, Lackawanna and Western Railroad Company, .....	Second, Third, Fourth, Fifth, Eighth, Ninth, Tenth, .....	9,532,400	19,673
Ledleigh Valley Coal Company, .....	Fifth, Sixth, Seventh, Eighth, Eleventh, Twelfth, Fourteenth, Eighteenth, Twentieth .....	8,188,891	14,757
Delaware and Hudson Company, .....	First, Second, Sixth, Seventh, Ninth, .....	5,933,324	12,784
Pennsylvania Coal Company, .....	Third, Fifth, Sixth, .....	5,448,785	10,530
Leligh and Wilkes-Barre Coal Company, .....	Seventh, Ninth, Tenth, Eighteenth, .....	5,407,433	9,353
Ledleigh Coal and Navigation Company, .....	Seventeenth, .....	4,114,818	8,538
Hudson Coal Company, .....	First, Second, Sixth, Seventh, Ninth, .....	2,266,070	4,960
Scranton Coal Company, .....	Third, Fourth, Fifth, Sixth, .....	2,196,311	5,478
Kingsdon Coal Company, .....	First, Second, Third, Fourth, .....	2,168,780	3,557
Mineral Railroad and Mining Company, .....	Eighth, Ninth, .....	1,991,852	4,869
Susquehanna Coal Company, .....	Fifteenth, Sixteenth, .....	1,979,162	4,150
Hillside Coal and Iron Company, .....	Tenth, Thirtieth, .....	1,627,737	3,462
Coke Brothers and Company, Incorporated, .....	First, Fifth, Sixth, Twentieth, .....	1,515,372	2,538
G. B. Markle Company, .....	Eleventh, Seventeenth, Eighteenth, .....	1,242,604	2,026
Summit Branch Mining Company, .....	Twentieth, .....	915,102	2,337
Price-Patocast Coal Company, .....	Third, .....	653,179	1,410
Pardee Brothers and Company, .....	Eleventh, .....	633,822	1,010
West End Coal Company, .....	Tenth, .....	587,488	1,141
Forty Feet Coal Company, .....	Eighth, .....	564,282	1,157
A. Fardese and Company, .....	Eleventh, .....	541,493	1,131
Jermyn and Company, .....	Fifth, .....	562,318	1,094
Parish Coal Company, .....	Ninth, .....	521,104	1,106
Stearick Creek Coal Company, Limited, .....	Second, .....	514,101	1,067
St. Clair Coal Company, .....	Nineteenth, .....	493,000	748
C. M. Tolson and Company, .....	Eleventh, .....	370,070	803
Lyle Coal Company, .....	Nineteenth, .....	368,349	915
Lackawanna Coal Company, Limited, .....	Second, .....	367,615	520
Thomas Collieries Company, .....	Thirteenth, .....	365,516	586
Colonial Collieries Company, .....	Fifteenth, .....	361,097	838
Plymouth Coal Company, .....	Eighth, Ninth, .....	361,097	838

Midvalley Coal Company, .....	Fourteenth, .....	855,238	587
Mt. Jackson Coal Company, .....	Eighth, .....	319,530	708
Pine Hill Coal Company, .....	Nineteenth, .....	311,797	694
Totals, .....		75,219,542	153,814

The 34 companies named in this table, out of 135 companies in the region, produced 75,219,542 tons, or 39.09 per cent. of the total output, 84,426,869 tons.



TABLE F—Classification of employees killed or fatally injured inside and outside the mines, 1899-1912, inclusive

Employees Killed or Fatally Injured	Years														
	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	Totals
Inside															
Mine foremen and assistants, .....	2	.....	5	2	3	3	1	2	2	3	1	2	2	1	29
Fire bosses and assistants, .....	2	5	2	3	2	1	2	6	6	3	2	2	5	1	38
Miners, .....	199	184	224	114	202	233	308	226	309	313	264	254	306	262	3,398
Miners' laborers, .....	114	95	122	62	110	145	148	133	136	154	126	147	176	117	1,785
Drivers and runners, .....	39	33	45	27	46	31	31	32	46	49	37	40	45	42	543
Doorboys, etc., .....	18	8	6	5	12	20	14	9	18	18	11	6	15	8	168
All other employees, .....	15	33	37	32	51	63	47	48	88	56	49	58	66	67	710
Totals, .....	389	358	441	245	426	496	551	456	601	596	490	509	615	498	6,671
Outside															
Foremen, .....	1	.....	.....	.....	1	1	.....	2	.....	2	1	.....	4	1	13
Blacksmiths and carpenters, .....	2	2	.....	2	4	5	5	5	7	5	4	.....	7	3	57
Engineers and firemen, .....	6	2	5	1	6	3	6	3	8	4	7	4	2	7	70
Slatepickers, .....	10	9	9	12	9	11	24	14	16	14	7	7	8	5	156
All other employees, .....	53	40	58	34	72	79	53	77	82	57	58	74	63	87	892
Totals, .....	72	53	72	55	92	99	93	101	107	82	77	92	84	103	1,182
Grand totals inside and outside, ..	461	411	513	300	518	595	644	557	708	678	567	601	699	601	7,853

NOTE. This table shows that of the 44,696 miners employed during 1912, 262 were killed by accidents or about 5.86 lives lost for every 1,000 employed. Of the 33,438 miners' laborers employed, 117 lost their lives by accident or about 3.5 for every 1,000 employed. Of the 11,479 drivers and runners employed, 42 were killed or about 3.66 for every 1,000 employed. The number of lives lost inside the mines during the year for every 1,000 employees was 3.90. The number of fatalities among the miners is above the average, and the number among the miners' laborers, drivers and runners is about the average.



TABLE H.—Nationality of employes killed or fatally injured inside and outside the mines, 1892-1912, inclusive

Nationality	1892-1895	1896-1900	1901-1905	1906-1910	1911-1912
American, .....	310	404	617	618	261
English, .....	124	132	94	78	35
Welsh, .....	154	176	122	122	37
Scotch, .....	8	21	12	9	3
Irish, .....	287	332	212	159	47
German, .....	93	97	97	80	26
Totals, .....	976	1,192	1,154	1,066	409
Polish, .....	420	609	669	926	350
Hungarian, .....	195	136	103	89	13
Italian, .....	67	68	142	246	108
Slavonian, .....	30	42	151	200	110
Lithuanian, .....	17	36	132	321	165
Austrian, .....	20	39	84	77	41
Russian, .....	7	39	88	150	70
Greek, .....	5	15	9	13	15
Swedish, .....	3	10	4	5	2
French, .....	1	2	2	1	1
Tyrolean, .....		3	9	13	3
Bohemian, .....		1		3	3
Assyrian, .....			1		
Canadian, .....			2		
Montenegrin, .....				2	
Horvat, .....					2
Hagyat, .....					5
Hebrew, .....					2
Syrian, .....					1
Totals, .....	765	1,050	1,416	2,045	891
Grand totals, .....	1,741	2,242	2,570	3,111	1,300

TABLE I.—Production of coal; production per employe inside; quantity of explosives used, and production per each pound of explosives used, 1892-1912, inclusive

Years	Production in tons of 2,000 pounds	Average number of tons of coal produced per employe inside	Explosives			
			Number of pounds of black powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used	Average number of tons of coal produced for each pound of explosives used
1892, .....	51,226,977	624	30,981,875	1,092,190	.....	1.59
1893, .....	52,841,110	611	31,723,771	1,324,142	.....	1.60
1894, .....	50,966,920	580	30,755,450	1,713,235	.....	1.57
1895, .....	56,948,756	638	22,766,775	1,797,494	.....	1.65
1896, .....	53,813,249	568	32,117,950	1,733,970	.....	1.59
1897, .....	52,581,036	549	31,894,956	2,415,650	.....	1.54
1898, .....	52,892,594	579	30,670,100	3,025,015	.....	1.57
1899, .....	69,518,331	657	34,317,275	3,649,417	.....	1.59
1900, .....	57,303,393	609	30,929,500	3,454,641	.....	1.67
1901, .....	67,091,665	682	33,020,100	4,155,685	.....	1.59
1902, .....	41,346,935	*482	21,128,675	2,130,965	.....	†1.77
1903, .....	75,232,585	††737	42,529,400	5,317,422	.....	1.57
1904, .....	73,594,369	662	44,779,800	6,519,312	.....	1.43
1905, .....	78,647,020	676	47,570,500	8,353,594	.....	1.41
1906, .....	72,139,540	677	40,352,075	7,980,733	.....	1.41
1907, .....	86,056,412	730	47,636,700	10,544,731	.....	1.48
1908, .....	83,543,243	672	49,330,800	10,766,245	.....	1.39
1909, .....	80,223,833	651	41,191,857	10,724,616	666,827	1.53
1910, .....	83,683,994	689	45,112,322	11,171,458	1,506,140	1.45
1911, .....	90,917,176	721	47,846,483	13,369,056	2,122,264	1.44
1912, .....	84,426,869	661	41,401,015	13,685,062	2,037,026	1.48

The ton of 2,000 pounds is used so that a comparison can be made with the bituminous production per pound of powder used.

This decrease in production per employe inside was caused by the small number of days worked on account of the strike.

\*The increase in production per pound of powder used was caused by the production of the washeries during the strike.

††The increase in production per employe was due to the large production of the washeries.



TABLE J.—Number of employees inside and outside the mines, by counties, 1899-1912, inclusive

Counties	1899	1900	1901	1902	1903	1904	1905
Carbon, .....	3,993	4,242	4,355	3,805	4,051	4,467	4,240
Columbia, .....	2,302	2,693	2,359	2,339	2,236	2,192	2,368
Dauphin, .....	2,350	2,577	2,353	1,945	2,140	2,113	2,167
Lackawanna, .....	30,886	32,811	34,798	35,333	37,470	40,675	40,859
Luzerne, .....	50,803	52,015	53,280	52,766	55,639	59,136	60,734
Northumberland, .....	14,697	15,105	14,187	14,766	14,890	14,345	15,298
Schuylkill, .....	33,392	33,259	33,997	34,433	33,443	35,979	35,298
Sullivan, .....	465	521	434	752	648	665	40,465
Susquehanna, .....	1,210	1,250	1,469	1,356	1,363	1,392	1,397
Wayne, .....	406	11	589	.....	253	366	370
Totals, .....	140,604	143,824	147,651	148,139	151,827	161,330	168,254

Counties	1906	1907	1908	1909	1910	1911	1912
Carbon, .....	4,469	4,782	5,522	5,155	5,362	5,223	5,778
Columbia, .....	2,246	2,296	2,412	2,398	1,812	2,066	2,166
Dauphin, .....	2,333	2,124	2,234	2,215	2,229	2,380	2,347
Lackawanna, .....	41,429	42,742	42,418	44,213	43,214	43,991	43,927
Luzerne, .....	54,441	58,795	63,099	60,500	59,395	62,880	63,128
Northumberland, .....	14,730	15,709	15,581	14,878	15,133	15,148	15,392
Schuylkill, .....	40,289	39,870	40,775	39,457	38,553	38,285	39,822
Sullivan, .....	631	719	875	963	920	992	996
Susquehanna, .....	1,320	1,275	1,302	1,297	1,267	1,313	1,391
Wayne, .....	384	463	225	194	190	160	151
Totals, .....	166,175	168,774	174,563	171,195	168,175	173,338	175,098

TABLE K.—Production of coal in tons of 2,000 pounds, by counties, 1899-1912, inclusive

Counties	1899	1900	1901	1902	1903	1904	1905
Carbon, .....	1,826,267	1,863,637	1,858,519	1,104,462	2,150,021	2,253,512	2,476,406
Columbia, .....	1,002,469	980,721	1,209,859	738,070	1,353,904	1,131,634	1,229,697
Dauphin, .....	817,328	779,135	830,572	423,341	732,970	723,414	723,126
Lackawanna, .....	14,838,821	13,751,961	17,258,125	11,851,169	20,046,133	19,007,628	19,709,164
Luzerne, .....	22,287,712	21,481,122	23,963,869	14,577,949	27,878,362	27,705,288	29,992,636
Northumberland, .....	4,880,292	4,690,944	5,430,991	3,162,066	5,518,580	5,516,647	5,483,181
Schuylkill, .....	13,694,171	12,968,899	15,277,665	8,622,103	16,389,565	16,173,158	17,975,160
Sullivan, .....	183,182	235,112	152,505	409,017	293,442	294,305	310,496
Susquehanna, .....	699,020	556,003	743,105	452,758	800,773	692,440	680,146
Wayne, .....	309,069	21,862	389,462	.....	68,885	71,353	67,008
Totals, .....	60,518,331	57,363,206	67,094,665	41,340,335	75,282,585	73,594,369	78,647,020

Counties	1906	1907	1908	1909	1910	1911	1912
Carbon, .....	2,246,873	2,762,523	2,784,946	2,652,997	3,214,169	3,312,483	2,843,876
Columbia, .....	969,065	1,188,238	1,182,826	1,093,103	980,145	1,193,736	1,214,527
Dauphin, .....	734,723	829,890	848,005	932,393	886,192	946,963	945,102
Lackawanna, .....	18,840,561	22,433,409	21,631,995	20,489,212	21,182,921	22,588,414	20,617,308
Luzerne, .....	26,612,192	30,853,087	31,728,997	30,992,306	32,106,979	31,061,582	32,643,232
Northumberland, .....	5,367,497	6,661,392	6,067,741	5,987,835	6,234,317	7,109,372	6,851,191
Schuylkill, .....	16,376,538	20,160,970	18,196,714	16,794,597	17,696,013	19,234,447	17,986,745
Sullivan, .....	358,627	433,101	550,712	641,216	632,874	717,429	649,335
Susquehanna, .....	562,103	644,088	487,900	589,885	628,808	672,600	582,510
Wayne, .....	71,381	87,594	63,906	50,339	51,576	70,150	92,843
Totals, .....	72,139,510	86,056,412	83,548,243	80,223,833	82,683,994	90,917,176	84,426,869

TABLE L.—Fatal accidents per 1,000 employes inside and outside the mines, and production in tons per fatal accident, by years and by decades, 1870-1912, inclusive

Years	Employes	Fatal accidents	Fatal accidents per 1,000 employes	Production in tons of 2,000 pounds	Production per fatal accident	Fatal accidents per 1,000,000 tons produced
1870, .....	35,660	211	5.93	14,172,004	67,166	14.89
1871, .....	37,483	210	5.60	15,532,252	73,963	13.52
1872, .....	44,745	223	4.98	15,567,973	69,811	14.32
1873, .....	48,199	264	5.48	21,001,521	79,551	12.57
1874, .....	53,402	231	4.33	19,930,240	86,278	11.59
1875, .....	69,966	238	3.40	23,402,646	98,330	10.17
1876, .....	70,474	228	3.24	23,440,666	102,810	9.73
1877, .....	66,842	194	2.90	24,727,213	127,460	7.85
1878, .....	63,964	187	2.92	20,900,966	111,770	8.95
1879, .....	68,847	262	3.81	31,036,600	118,460	8.44
Totals and percentages, .....	559,527	2,248	4.02	209,712,081	93,288	10.72
1880, .....	73,373	202	2.75	27,974,532	138,488	7.22
1881, .....	76,031	273	3.59	34,202,558	125,284	7.98
1882, .....	82,200	291	3.54	35,067,430	120,472	8.30
1883, .....	91,421	323	3.53	37,747,369	116,865	8.56
1884, .....	101,073	332	3.28	36,468,738	109,846	9.10
1885, .....	100,320	332	3.31	38,232,155	115,157	8.68
1886, .....	103,044	279	2.71	38,950,932	139,609	7.16
1887, .....	106,517	316	2.97	42,156,300	133,406	7.50
1888, .....	122,218	364	2.98	46,635,037	128,118	7.81
1889, .....	119,964	397	3.32	43,650,768	109,952	9.09
Totals and percentages, .....	976,161	3,109	3.18	381,075,819	122,572	8.16
1890, .....	119,919	378	3.15	44,986,286	119,011	8.40
1891, .....	123,308	428	3.47	49,701,322	116,125	8.61
1892, .....	130,300	418	3.21	51,226,978	122,553	8.16
1893, .....	138,069	456	3.30	52,841,110	115,880	8.63
1894, .....	139,939	446	3.19	50,966,920	114,276	8.75
1895, .....	143,705	421	2.93	56,948,756	135,270	7.39
1896, .....	150,088	502	3.34	53,843,250	107,257	9.32
1897, .....	149,557	423	2.83	52,581,036	124,306	8.04
1898, .....	142,420	411	2.89	52,812,675	128,498	7.78
1899, .....	140,604	461	3.28	60,518,331	131,276	7.62
Totals and percentages, .....	1,377,909	4,344	3.15	526,426,664	121,185	8.25
1900, .....	143,824	411	2.86	57,363,396	139,570	7.16
1901, .....	147,651	513	3.47	67,094,665	130,789	7.65
1902, .....	148,139	300	2.03	41,340,935	137,803	7.26
1903, .....	151,827	518	3.41	75,232,585	145,237	6.89
1904, .....	161,330	595	3.69	73,594,369	123,688	8.08
1905, .....	168,254	644	3.83	78,647,020	122,123	8.19
1906, .....	166,175	557	3.35	72,139,510	129,514	7.72
1907, .....	168,774	708	4.20	86,056,412	121,549	8.23
1908, .....	174,503	678	3.88	83,543,243	123,220	8.12
1909, .....	171,195	567	3.31	80,228,833	141,488	7.07
Totals and percentages, .....	1,601,672	5,491	3.42	715,235,946	130,256	7.68
1910, .....	168,175	601	3.57	83,683,994	139,241	7.18
1911, .....	173,338	699	4.03	90,917,176	130,067	7.69
1912, .....	175,098	604	3.43	84,426,869	140,477	7.12
Totals and percentages, .....	516,611	1,901	3.68	259,028,039	136,259	7.34
Grand totals and percentages, ....	5,031,880	17,093	3.40	2,091,478,549	122,359	8.17

Note. This table will show that contrary to the general belief, accidents in the anthracite mines are decreasing.

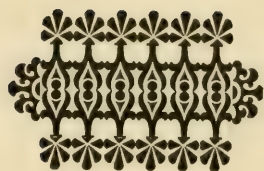
In the first decade, 1870-1879, for every 1,000,000 tons produced, 10.72 lives were lost; in the second decade, 1880-1889, 8.16 lives were lost; in the third decade, 1890-1899, 8.25 lives were lost; in the fourth decade, 1900-1909, 7.68 lives were lost; in the three years, 1910-1912, 7.34 lives were lost. The number of lives lost for every 1,000,000 tons produced during 1912 was 7.12, which is a fair showing.

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# ANTHRACITE DISTRICTS

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## FIRST DISTRICT

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LACKAWANNA COUNTY

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Carbondale, Pa., February 17, 1913.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor to transmit herewith my report as Inspector of Mines for the First Anthracite District, for the year ending December 31, 1912.

Respectfully submitted,

P. J. Moore, Inspector.

## SUMMARY OF STATISTICS

Number of collieries, .....	11
Number of mines, .....	24
Number of mines in operation, .....	24
Number of tons of coal shipped to market, .....	2,068,840
Number of tons used at mines for steam and heat, .....	229,208
Number of tons sold to local trade and used by employes, .	21,010
Number of tons produced, .....	2,319,058
Number of tons produced by compressed air machines, ..	.....
Number of tons produced by electrical machines, .....	.....
Number of persons employed inside of mines, .....	4,141
Number of persons employed outside, .....	1,534
Number of fatal accidents inside of mines, .....	17
Number of fatal accidents outside, .....	4
Number of non-fatal accidents inside of mines, .....	23
Number of non-fatal accidents outside, .....	5
Number of tons of coal produced per fatal accident inside,	136,415
Number of tons produced per fatal accident outside, ....	579,764
Number of tons produced per fatal accident inside and out- side, .....	110,431
Number of persons employed per fatal accident inside, ...	244
Number of persons employed per fatal accident outside, ..	383
Number of persons employed per fatal accident inside and outside, .....	270
Number of persons employed per non-fatal accident inside,	180
Number of persons employed per non-fatal accident out- side, .....	307
Number of persons employed per non-fatal accident inside and outside, .....	202
Number of wives made widows, .....	11
Number of children made orphans, .....	19
Number of steam locomotives used inside of mines, .....	.....
Number of steam locomotives used outside, .....	16
Number of compressed air locomotives used inside, .....	.....
Number of compressed air locomotives used outside, ....	.....
Number of electric motors used inside, .....	49
Number of electric motors used outside, .....	.....
Number of fans in use, .....	20
Number of furnaces in use, .....	.....
Number of gaseous mines in operation, .....	1
Number of non-gaseous mines in operation, .....	23
Number of new mines opened, .....	.....
Number of old mines abandoned, .....	.....

## TABLE A

## PRODUCTION OF COAL

Names of Operators	Tons
Delaware and Hudson Company, .....	1,586,815
Scranton Coal Company, .....	340,313
Hillside Coal and Iron Company, .....	181,221
Archbald Coal Company, .....	115,440
Humbert Coal Company, .....	72,882
West Mountain Coal Company, .....	17,218
Fallbrook Coal Company, .....	5,169
Total, .....	<u>2,319,058</u>

## Production by Counties

Lackawanna, .....	<u>2,319,058</u>
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TABLE B—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Number of employees inside	Number of employees outside	Total number of employees	Number of employees inside per fatal accident	Number of employees outside per fatal accident	Number of employees inside per non-fatal accident	Number of employees outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total								
Delaware and Hudson Co., .....	10	3	13	17	4	21	158,681	2,857	921	3,778	286	307	168	230
Scranton Coal Co., .....	4	.....	4	2	.....	2	85,078	2,694	295	2,989	173	.....	347	.....
Hillside Coal and Iron Co., .....	.....	1	1	2	1	3	170,156	215	123	338	.....	123	107	123
Archbald Coal Co., .....	3	.....	3	2	.....	2	90,610	198	109	307	66	.....	99	.....
Miscellaneous Companies, .....	.....	.....	.....	.....	.....	.....	57,720	177	86	263	.....	.....	.....	.....
Totals and averages for district,....	17	4	21	23	5	28	136,415	4,141	1,534	5,675	244	383	180	307

TABLE C.—Classification of Fatal Accidents Inside and Outside of Mines

	Months												Totals	Percentages
	January	February	March	April	May	June	July	August	September	October	November	December		
Causes of Accidents Inside														
Falls of coal, .....			1						2	1			4	13.53
Falls of roof, .....	2						1	1		2	2	1	9	52.94
Explosions of powder and dynamite, .....							1						1	5.88
Blasts, premature and otherwise, .....										1			1	5.88
Struck by a prop, .....	1												1	5.89
By falling, .....										1			1	5.88
Totals, .....	3		1				2	1	2	5	2	1	17	100.00
Causes of Accidents Outside														
Cars, .....	1								1				2	50.00
Machinery, .....			1										1	25.00
By falling, .....							1						1	25.00
Totals, .....	1		1				1		1				4	100.00
Grand totals inside and outside, .....	4		2				3	1	3	5	2	1	21	.....

TABLE D.—Classification of Non-Fatal Accidents Inside and Outside of Mines

	Months												Totals	Percentages
	January	February	March	April	May	June	July	August	September	October	November	December		
Causes of Accidents Inside														
Falls of coal, .....	1	1	...	...	...	...	...	1	...	1	...	...	4	17.39
Falls of roof, .....	2	...	...	...	...	...	2	...	1	...	1	4	10	43.48
Mine cars, .....	2	...	...	...	...	...	...	1	1	...	...	1	5	21.74
Explosions of powder and dynamite, .....	...	...	...	...	...	1	...	...	1	...	...	...	2	8.69
Blasts, premature and otherwise, .....	...	1	...	...	...	...	...	...	...	...	...	...	1	4.35
By falling, .....	...	...	...	...	...	...	...	...	1	...	...	...	1	4.35
Totals, .....	5	2	...	...	...	1	2	2	4	1	1	5	23	100.00
Causes of Accidents Outside														
Cars, .....	...	...	1	...	...	...	...	...	...	...	...	...	1	20.00
Machinery, .....	1	...	...	...	...	...	...	...	...	...	...	...	1	20.00
By falling, .....	...	...	1	...	1	...	...	...	...	...	...	1	3	60.00
Totals, .....	1	...	2	...	1	...	...	...	...	...	...	1	5	100.00
Grand totals inside and outside, .....	6	2	2	...	1	1	2	2	4	1	1	6	28	...

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
<b>Inside</b>													
Miners, .....	2	...	...	...	...	...	2	1	1	4	1	...	11
Miners' laborers, .....	1	...	1	...	...	...	...	...	1	...	1	...	5
Drivers and runners, .....	...	...	...	...	...	...	...	...	...	1	...	...	1
Totals, .....	2	...	1	...	...	...	2	1	2	5	2	1	17
<b>Outside</b>													
Blacksmiths and carpenters, .....	...	...	...	...	...	...	1	...	...	...	...	...	1
Slatepickers, (boys), .....	...	...	1	...	...	...	...	...	...	...	...	...	1
Laborers, .....	1	...	...	...	...	...	...	...	1	...	...	...	2
Totals, .....	1	...	1	...	...	...	1	...	1	...	...	...	4
Grand totals inside and outside, .....	4	...	2	...	...	...	3	1	3	5	2	1	21

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
<b>Inside</b>													
Miners, .....	2	1	...	...	...	1	...	...	2	1	1	2	10
Miners' laborers, .....	2	1	...	...	...	...	2	1	1	...	...	2	9
Drivers and runners, .....	1	...	...	...	...	...	...	1	...	...	...	1	3
Motor brakemen, .....	...	...	...	...	...	...	...	...	1	...	...	...	1
Totals, .....	5	2	...	...	...	1	2	2	4	1	1	5	23
<b>Outside</b>													
Slatepickers (boys), .....	1	...	1	...	...	...	...	...	...	...	...	1	3
Miners, .....	...	...	1	...	...	...	...	...	...	...	...	...	1
Laborers, .....	...	...	...	...	1	...	...	...	...	...	...	...	1
Totals, .....	1	...	2	...	1	...	...	...	...	...	...	1	5
Grand totals inside and outside, .....	6	2	2	...	1	1	2	2	4	1	1	6	28

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months											
	Totals	December	November	October	September	August	July	June	May	April	March	February
American, .....	5	1	2	2	1	2	2	1	1	1	1	1
Welsh, .....	2	1	1	1	1	1	1	1	1	1	1	1
Polish, .....	2	1	1	1	1	1	1	1	1	1	1	1
Italian, .....	4	1	1	1	1	1	1	1	1	1	1	1
Russian, .....	2	1	1	1	1	1	1	1	1	1	1	1
Totals, .....	21	1	2	5	3	1	3	1	1	1	2	4

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months											
	Totals	December	November	October	September	August	July	June	May	April	March	February
American, .....	10	2	1	1	1	2	1	1	1	1	1	1
English, .....	2	1	1	1	1	1	1	1	1	1	1	1
Welsh, .....	1	1	1	1	1	1	1	1	1	1	1	1
Irish, .....	1	1	1	1	1	1	1	1	1	1	1	1
German, .....	1	1	1	1	1	1	1	1	1	1	1	1
Polish, .....	4	1	1	1	1	1	1	1	1	1	1	1
Italian, .....	8	1	1	1	1	1	1	1	1	1	1	1
Slavonian, .....	1	1	1	1	1	1	1	1	1	1	1	1
Totals, .....	28	6	1	1	4	2	2	1	1	1	2	6



TABLE I.—Operators and mines, kind of openings, type and size of fans, size of furnaces, volume of air produced by fan or furnace per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	Kind of opening	Gaseous or non-gaseous	Method of ventilation	Diameter of fan in feet and inches	Width of blades in feet and inches	Depth of blades in feet and inches	Number of revolutions per minute	Water gauge developed—in inches	Name of fan	Power used	Area of furnace bars in square feet	Number of splits of air currents	Number of cubic feet of air per minute entering the mine at inlet	Total number of cubic feet of air per minute circulating in all the splits	Number of cubic feet of air per minute passing out at outlet	Number of persons employed inside
<b>Delaware and Hudson Co.</b>																
Coal Brook Colliery:																
Coal Brook No. 1.....	Tunnel...			20 a*	5	6	75	1.7					37,000	36,000	38,000	123
Coal Brook No. 2.....	Drift.....			17 b	4.5	4.5	90	1.2					87,000	87,000	88,000	158
Coal Brook No. 1 Grassy.....	Tunnel...			20 a	5	6	75	1.7					35,000	32,000	40,000	148
Coal Brook No. 2 Grassy.....	Tunnel...			10 c	3	3	90	1.7					25,000	20,000	21,000	165
Coal Brook No. 3 Grassy.....	Tunnel...			17 b	4	5	75	1.6					65,000	55,000	62,000	198
Coal Brook, Wilkes.....	Tunnel...			20.5d	5	6	90	1.9					130,000	110,000	125,000	371
Coal Brook, Wilson Creek.....	Tunnel...			20.5d	5	6	90	1.9					26,000	24,000	28,000	113
Coal Brook No. 1 Pattens.....	Tunnel...															
<b>Jermyn Colliery:</b>																
Jermyn.....	Shaft.....	Non-gas..	2 Fans, ..	20	5	6	78	1.5		Steam.....		10	210,000	200,000	215,000	637
				17	5	6	75	.9								
<b>Powderly Colliery:</b>																
Powderly.....	Tunnel...	Non-gas..	(Natural.										25,000	20,000	27,000	75
Powderly No. 1.....	Slope...		Fan, ...	17	4	5	70	.5	Gubal, ...	Steam.....		1	44,000	40,000	46,000	216
Powderly No. 2.....	Tunnel...		Fan, ...	16	4	4	160	.4	Gubal, ...	Electricity..		3	60,000	55,000	65,000	170
Powderly No. 1.....	Tunnel...		Fan, ...	10	7.5	2.66	140	.8	Gubal, ...	Electricity..		4	115,000	100,000	125,000	185
<b>White Oak Colliery:</b>																
White Oak No. 11, Dunmore.....	Tunnel...	Non-gas..	Fan, ...	17	5	5	90	1.6	Gubal, ...	Steam.....		5	100,000	90,000	110,000	323
White Oak No. 6.....	Tunnel...	Non-gas..	Fan, ...	10	8	2	100	.8	Buffalo, ...	Electricity..		2	45,000	40,000	50,000	145

\*a, b, c, d.—Four fans.





TABLE 2.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured, quantity of powder, dynamite and permissible explosives used, etc.

Names of Operators and Collieries	County	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employees	Total production of coal in tons	Number of days worked	Number of employees	Number of fatal accidents	Number of non-fatal accidents	Explosives				Number of horses and mules
										Number of pounds of powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used		
Delaware and Hudson Co.														
Coal Brook, .....	{ Lackawanna, .....	542,915	39,976	.....	582,891	241	1,424	6	1	576,500	19,975	.....	86	
Jermyn, .....		337,220	17,566	.....	354,786	243	773	2	2	301,325	18,833	3,955	46	
Powderly, .....		319,366	21,649	.....	341,015	243	873	2	5	188,150	26,228	6	63	
White Oak, .....		176,109	28,740	3,566	204,849	231	670	3	7	202,600	70,319	10,725	39	
		1,374,810	112,905	8,038	1,496,753	.....	3,740	13	21	1,268,575	135,355	14,655	233	
Washeries														
Jermyn, .....	Lackawanna, .....	70,546	19,516	.....	90,062	119	38	.....	.....	.....	.....	.....	.....	.....
Totals, .....		1,445,356	133,421	8,038	1,586,815	.....	3,778	13	21	1,268,575	135,355	14,655	233	
Scranton Coal Co.														
Raymond, .....	{ Lackawanna, .....	219,000	31,572	1,225	252,007	220	774	3	1	106,000	114,850	.....	67	
Riverside, .....		57,368	30,995	553	88,916	183	215	1	1	65,000	11,100	.....	30	
Totals, .....		276,368	61,867	2,078	340,313	.....	989	4	2	261,000	115,950	.....	97	
Hillside Coal and Iron Co.														
Eric, .....	Lackawanna, .....	161,285	19,008	928	181,221	174	338	1	3	118,925	2,000	13,797	21	
Tappans, .....		108,939	6,047	454	115,440	207	307	3	2	111,500	68,035	.....	26	
Archbald Coal Co.														





TABLE 2.—Part 2

Names of Operators	County	Number of Boilers		Locomotives			Total horse power	Number of steam engines of all classes	Total horse power	Number of pumps delivering water to surface	Capacity in gallons per minute	Quantity delivered to surface per minute—gallons	Number of electric dynamos	Number of air compressors
		Cylindrical	Horse power	Tubular	Horse power	Total horse power	Steam	Air	Electric					
Delaware and Hudson Co., .....	Lackawanna.	18	486	36	6,900	7,386	8	....	42	109	51,100	10,800	11	5
Seranton Coal Co., .....		....	....	18	2,200	2,200	3	....	....	30	7,150	5,509	....	....
Hillside Coal and Iron Co., .....		....	....	12	1,425	1,425	....	....	....	19	1,733	1,560	....	....
Archbald Coal Co., .....		....	....	4	400	400	2	....	....	10	600	450	....	....
Humbert Coal Co., .....		....	....	4	365	365	1	....	....	8	350	350	....	....
West Mountain Coal Co., .....		1	85	1	150	85	2	....	....	....	....	....	....	....
Fallbrook Coal Co., .....		....	....	....	....	150	....	....	....	....	....	....	....	....
Totals, .....		19	571	75	11,440	12,011	16	....	49	180	60,937	18,669	15	9







TABLE 4.—Fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in brief
Jan. 9	Joseph Zlinsky, .....	Polish, .....	Laborer, .....	27	S.	....	....	Coal Brook, ...	Lackawanna	Killed by being struck on head by a prop that was discharged by a piece of coal that burst from pillar, while loading car near face of pillar that was being reared.
13	Michael Yeselavago, ...	Polish, .....	Miner, .....	22	M.	1	1	Raymond, .....		Fatally injured by fall of rock near face of chamber. He fired a blast, which discharged three props, and while trying to replace the props the roof fell.
26	Joseph Vemensky, ...	Russian, ....	Laborer, .....	22	S.	....	....	White Oak, ...		Fatally injured by being squeezed about the body between railroad cars on empty track above breaker. He was assisting to move the car by pushing on the side, both branches being filled with cars at the time. The bodies of the cars came close to each other in passing and caught him.
	Alfred Merrigan, ....	American, ..	Miner, .....	30	M.	1	1	White Oak, ...		Partly injured by fall of roof while loading car near face of chamber. He had tried to bar piece down the day previous, but failed to do so, and continued to work under it.
March 2	Philip Gentile, .....	Italian, .....	Slatepicker, ...	17	S.	....	....	Coal Brook, ...	Lackawanna	Skull fractured in an unknown manner in breaker shortly after the machinery was put in motion after dinner.
4	Charles Barcosky, ...	Polish, .....	Laborer, .....	29	S.	....	....	Powderly, ....		Fatally injured by fall of coal while loading car near face of pillar. The piece should have been taken down before any one was allowed to work on same side.
9	David Walsh, .....	American, ..	Miner, .....	53	M.	1	2	Powderly, ....		Fatally injured by fall of roof near face of pillar while rebbing pillars. The assistant mine foreman had ordered a set of timber placed under this place.

Fatally injured by falling from the fourth to the second floor in washery. He was assisting the carpenters to repair the timber in washery, and while trying to fall a stick of timber in through a window that had been raised from the ground with a "Crab," his hold slipped and he fell backward and struck a belt that was in motion. Outside.

Face and leg burned by blasting powder. While preparing a cartridge he ignited the powder, presumably with his naked lamp. Died August 19.

Fatally injured by fall of roof back 20 feet from pillar he was robbing. The piece should have been taken down, and more timbers should have been in the place.

Fatally injured by fall of coal near pillar that they were robbing. One of his laborers was harring out a shot that had been fired in the pillar while Richards and Fusco were standing back on the middle of the track about 15 feet from pillar. There was a "slip," exposed in pillar that ran up through the top coal, which was kept up, and when the coal on the top coal fell across the track and the pillar was barred loose from this "slip," Richards and the laborer. The laborer was killed instantly, and Richards died later in the hospital.

Killed by being run over by cars. While repairing an eccentric on a mine locomotive near mouth of tunnel, a trip of rock cars came out of the mine and ran against the locomotive, which ran over him, outside.

Fatally injured. He was running alongside of a loaded car, and in some manner bumped against the pillar and fell back against the side of the car along the gangway road. Died October 23.

Fatally injured by fall of roof while drilling a hole at face of chamber.

Fatally injured by fall of top coal that projected over pillar that he was robbing.

July	26	James Marion,	American,	21	S.	.....	Erie,	.....	} Lackawanna
	30	Frank Barnes,	Polish,	59	M.	1	Jernyn,	.....	
Aug.	15	Henry Ponkalo,	Polish,	40	M.	1	6	Coal Brook,	
Sept.	20	Thomas D. Richards, Giuseppe Fusco,	Welsh, Italian,	50 24	M. S.	1 .....	1	Tappans,	
								Tappans,	
	26	William Evans,	Welsh,	21	S.	.....	.....	White Oak,	
Oct.	8	John Lotski,	Polish,	21	S.	.....	.....	Jernyn,	
	15	Robert Judge,	American,	43	M.	1	2	Coal Brook,	}
	17	John Quinn,	American,	36	S.	.....	.....	Coal Brook,	

TABLE 4—Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Oct. 26	Louie Tabian, .....	Italian, .....	Miner, .....	36, M., .....	1	1	1	Tappans, .....		Fatally injured. He was firing a blast in face of chamber in which dynamite and blasting powder were being used in the same hole. From all the indications it was supposed the blasting powder exploded, and he returned to the face, and while turning the dynamite exploded and threw coal against him.
	Alex Pubee, .....	Polish, .....	Miner, .....	43 M., .....	1	1	3	Riverside, ....		Fatally injured by fall of roof near face of pillar. He should have detected the piece that fell. The coal was free, no powder being used.
Nov. 2	John Chivilik, .....	Russian, ....	Laborer, .....	27 M., .....	1	1	2	Coal Brook, ..	Lackawanna	Fatally injured by fall of roof near face of chamber while loading car. The piece should have been detected.
	Dominiek Cavalanic, ..	Italian, .....	Miner, .....	27 M., .....	1	1	....	Raymond, ....		Killed by fall of roof while picking out some loose coal at face of chamber with a pick.
Dec. 20	Julian Rogaginski, ...	Polish, .....	Laborer, .....	27 S., .....	....	....	....	Raymond, ....		Fatally injured by a slab of roof falling on him while loading car near face of pillar. They were working four-hundred and one of the miners stated that he told the other miner to stand some props under the piece to make it safer, but the other miner neglected to do it.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 6	Joel Morcom, .....	English, ....	Miner, .....	59	M.	Jermyn, .....	Lackawanna	Ankle broken by piece of rock striking it while barring down rock at face of chamber.
8	Nichol Quatre, .....	Italian, ....	Laborer, .....	33	M.	Erie, .....		Leg injured by fall of rock. He was standing with the miner, who was drilling a hole at face of chamber, when they heard a crack in the roof. The miner tried to keep the laborer with him, but the laborer ran from the face and was caught by a piece of rock, that fell in the form of a "saddle." Leg had to be amputated.
13	Leonard Casey, .....	American, ..	Slatepicker, ....	15	.....	Powderly, .....		Arm broken by being caught by a belt and wound around a revolving shaft.
17	Julian Jozetok, .....	Polish, .....	Laborer, .....	21	S.	White Oak, .....		Leg fractured by being caught between two cars. While standing between two empty cars on heading road the mule started suddenly and he was caught between the bumpers.
18	Peter Henry, .....	American, ..	Runner, .....	42	S.	Jermyn, .....		Three ribs fractured and scalp lacerated by cars. He jumped off a motor and ran against a car that was standing on another track on heading road, and was knocked back under the moving empty trip.
31	Daniel Dempsey, ....	American, ..	Miner, .....	37	M.	Coal Brook, .....		Hip dislocated by fall of top coal at face of chamber.
Feb. 12	Joseph Phillips, .....	Italian, ....	Miner, .....	28	M.	Tappan, .....		Compound fracture of arm by flying coals from a shot at face of chamber. He did not give the usual time to warn, and was returning to face of chamber when shot went off.



TABLE 5—Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Feb. 23	Frank Dougher, .....	American, ..	Laborer, .....	45	M.	White Oak, .....		Knee-cap broken by a piece of coal falling on him near face of pillar while he was passing his car.
March 1	Louie Touch, .....	Italian, .....	Miner, .....	49	M.	White Oak, .....		Three ribs broken by mine cars. He was sitting on a trip of empty cars, and when the locomotive started the trip he fell under cars, Outside.
15	Albert Miller, .....	American, ..	Slatepicker, ....	15	S.	White Oak, .....		Arm fractured by falling down the breaker steps, Outside.
May 31	John Bridget, .....	Italian, .....	Laborer, .....	56	M.	Powderly, .....		Shoulder fractured by falling from the second floor to the first floor in mule barn. He was assisting to store hay away, Outside.
June 28	Alex Mulefosky, .....	Polish, .....	Miner, .....	28	M.	Raymond, .....		Face slightly injured by an explosion of dynamite while tamping the hole. He was tamping hole with a steel drill when the charge exploded.
July 19	Michael Ruddy, .....	Slavonian, ..	Laborer, .....	21	S.	Coal Brook, .....	Lackawanna	Collar bone fractured by a piece of rock falling on him while loading a car at face of pillar.
25	Carmelo Molito, .....	Italian, .....	Laborer, .....	21	S.	Tapians, .....		Head and back injured by fall of roof near face of chamber while loading car.
Aug. 16	John Henry, .....	American, ..	Laborer, .....	26	M.	Coal Brook, .....		Instep fractured by a piece of coal falling from pillar while loading car.
29	Wm. Case, .....	American, ..	Runner, .....	23	S.	Powderly, .....		Left leg fractured by being struck by mine car. A head block threw the car off the track.
Sept. 16	James McGowan, ....	American, ..	Miner, .....	40	M.	Coal Brook, .....		Knee cap dislocated and small bone fractured by falling while getting down from face of chamber.
	Albert Griffen, .....	English, ...	Motor brakeman,	13	S.	Coal Brook, .....		Legs crushed by being run over by an electric motor. He was running ahead of the motor to turn a switch when he fell and the motor ran over him. Legs had to be amputated.

Sept. 19	John Parolli, .....	Italian, .....	Laborer, .....	35	M.	Itverside, .....	Nose, jawbone and arm fractured by fall of roof while loading car at face of pillar that was being robbed.
20	Adolph Kernalsky, ..	Polish, .....	Miner, .....	45	M.	White Oak, .....	Face and hands burned by blasting powder. He was carrying a cartridge of blasting powder to face of chamber, when a spark from his lamp ignited the powder.
Oct. 5	Michael Morrow, .....	Italian, .....	Miner, .....	35	M.	Coal Brook, .....	Arm fractured by a piece of coal falling on him while barring loose coal at face of chamber.
Nov. 9	John Davis, .....	Welsh, .....	Miner, .....	49	M.	Powderly, .....	Body and arm injured by fall of roof while preparing to drill a hole in cross-cut at face of chamber.
Dec. 10	Joseph Molonofsky, ..	Polish, .....	Laborer, .....	35	M.	White Oak, .....	Leg and two ribs broken by fall of roof at face of chamber while loading car. The piece that fell was in the nature of a "bill," and hard to detect.
29	James Gallagher, ....	Irish, .....	Miner, .....	35	M.	Coal Brook, .....	Compound fracture of wrist by a piece of roof falling on him at face of chamber.
21	Harry Kearney, .....	American, ..	Laborer, ..	27	S.	White Oak, .....	Two ribs fractured by fall of roof. He was pulling a piece of roof down when it struck the car and fell against him.
	Dominick Ruttell, .....	Italian, .....	Miner, .....	35	M.	Powderly, .....	Arm fractured by fall of roof while barring down a piece of top coal.
30	Gas Conadine, .....	German, .....	Runner, .....	20	S.	Erle, .....	Arm fractured by mine car jumping off the track and squeezing him against the pillar.
31	William Murray, .....	American, ..	Slate picker, ...	14	S.	Erle, .....	Arm fractured by falling from the top of a railing he was climbing over. Outside.

Lackawanna

## CONDITION OF COLLIERIES

## DELAWARE AND HUDSON COMPANY

Coal Brook, Powderly, Jermyn and White Oak Collieries.—Ventilation, drainage and condition as to safety, good.

## SCRANTON COAL COMPANY

Raymond Colliery.—Ventilation, drainage and condition as to safety, good.

Riverside Colliery.—Ventilation good. Drainage and condition as to safety, fair.

## HILLSIDE COAL AND IRON COMPANY

Erie Colliery.—Ventilation, drainage and condition as to safety, good.

## ARCHBALD COAL COMPANY

Tappans Colliery.—Ventilation bad in New County vein. Drainage bad. Condition as to safety, fair.

Ventilation good in Dunmore vein. Drainage fair. Condition as to safety, good.

## HUMBERT COAL COMPANY

Sunnyside Colliery.—Ventilation, drainage and condition as to safety, fair.

## WEST MOUNTAIN COAL COMPANY

West Mountain Colliery.—Ventilation, drainage and condition as to safety, good.

## FALLBROOK COAL COMPANY

Murrins Colliery.—Ventilation, drainage and condition as to safety, fair.

## IMPROVEMENTS

## DELAWARE AND HUDSON COMPANY

Coal Brook Colliery.—Water course to Clinton colliery constructed a distance of 2,000 feet. Installed three  $6\frac{1}{2}$ -ton electric motors and one 12-ton electric motor for handling coal. Engine plane in No. 21 tunnel, 2,000 feet long, under construction. Installed 16-ton steam locomotive for handling coal from Wilson Creek to the breaker.

Powderly Colliery.—Installed two  $6\frac{1}{2}$ -ton electric motors with drums. Completed rope haulage in No. 1 tunnel, 3,500 feet long, and rope haulage in No. 1 slope, 1,800 feet long, also completed railroad from Powderly to Jermyn mines, outside. Installed one 21-ton steam locomotive for handling coal from mines to breaker.

Jermyn Colliery.—Finished new slope to bring coal from mines to surface, 350 feet long concreted on four sides, 9 feet by 11 feet, completed 150 H. P. electric hoist on engine plane No. 14. Conveyor line,

300 feet long, delivering coal from surface to breaker is under construction. A 10-foot Buffalo steel fan is under construction in No. 8 plane.

White Oak Colliery.—Grassy slope finished from surface to coal and concreted on four sides. Installed 26 by 48 engines for Gravity No. 3 slope. A 20 foot Guibal fan was erected and equipped with a double 14 by 24 engine, and a brick house, 33 feet by 32 feet, was built for same. A new breaker of 1,500 tons capacity is almost completed. A brick wash-house, 18 by 48 feet, was built. Completed new boiler plant, comprising four 300 H. P. Sterling boilers and brick building. A supply house, 20 by 40 feet, was completed.

#### ARCHBALD COAL COMPANY

Tappans Colliery.—Two wings were added to the breaker to give additional pocket room, and an addition was made to the boiler house and a shaker placed therein to distribute the fuel.

The loading pockets were housed in and a 100 horse power return tubular boiler was installed to furnish steam heat.

A new Vulcan hoisting engine, 10 by 14 inch cylinders with loose drum 4 feet in diameter, and 8,000 feet of rope baulage, were installed at the New County slope. A new 16 by 12 by 12 Scranton duplex piston pump, 8 inch discharge, 10 inch suction, was installed in the Dunmore shaft.





## SECOND DISTRICT

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LACKAWANNA COUNTY

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Scranton, Pa., February 22, 1913.

Hon. James E. Roderick, Chief of Department of Mines, Harrisburg,  
Pa.

Sir: I have the honor to transmit herewith my report as Inspector of Mines for the Second Anthracite District, for the year ending December 31, 1912, as required by the Act of April 14, 1903.

Respectfully submitted,

L. M. EVANS, Inspector.

## SUMMARY OF STATISTICS

Number of collieries, .....	13
Number of mines, .....	36
Number of mines in operation, .....	36
Number of tons of coal shipped to market, .....	4,091,315
Number of tons used at mines for steam and heat, .....	568,761
Number of tons sold to local trade and used by employes, .....	77,328
Number of tons produced, .....	4,737,404
Number of tons produced by compressed air machines, ..	.....
Number of tons produced by electrical machines, .....	.....
Number of persons employed inside of mines, .....	9,574
Number of persons employed outside, .....	2,810
Number of fatal accidents inside of mines, .....	30
Number of fatal accidents outside, .....	6
Number of non-fatal accidents inside of mines, .....	61
Number of non-fatal accidents outside, .....	3
Number of tons of coal produced per fatal accident inside, .....	157,913
Number of tons produced per fatal accident outside, ....	789,567
Number of tons produced per fatal accident inside and outside, .....	131,594
Number of persons employed per fatal accident inside, ..	319
Number of persons employed per fatal accident outside, ..	468
Number of persons employed per fatal accident inside and outside, .....	344
Number of persons employed per non-fatal accident inside, ..	157
Number of persons employed per non-fatal accident outside, ....	937
Number of persons employed per non-fatal accident inside and outside, .....	193
Number of wives made widows, .....	24
Number of children made orphans, .....	50
Number of steam locomotives used inside of mines, .....	4
Number of steam locomotives used outside, .....	34
Number of compressed air locomotives used inside, .....	59
Number of compressed air locomotives used outside, ....	.....
Number of electric motors used inside, .....	38
Number of electric motors used outside, .....	.....
Number of fans in use, .....	34
Number of furnaces in use, .....	.....
Number of gaseous mines in operation, .....	22
Number of non-gaseous mines in operation, .....	14
Number of new mines opened, .....	.....
Number of old mines abandoned, .....	.....

## TABLE A

## PRODUCTION OF COAL

Names of Operators	Tons
Delaware and Hudson Company (Inside) }	1,813,995
Hudson Coal Company (Outside) }	
Delaware, Lackawanna and Western Railroad Company,	813,176
Scranton Coal Company, .....	753,594
Sterrick Creek Coal Company, Limited, .....	459,031
Lackawanna Coal Company, Limited, .....	328,883
Mount Jessup Coal Company, Limited, .....	240,274
Moosic Mountain Coal Company, .....:	201,141
Dolph Coal Company, Limited, .....	127,310
Total, .....	4,737,404

## Production by Counties

Lackawanna, .....	4,737,404
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TABLE B.—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Number of employees inside	Number of employees outside	Total number of employees	Number of employees inside per fatal accident	Number of employees outside per fatal accident	Number of employees inside per non-fatal accident	Number of employees outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total								
Delaware and Hudson Co., (Inside),.....	8			23	3	26	78,869	2,770	948	4,718	471	948	164	316
Hudson Coal Co. (Outside),.....	4	2	6	8		8	101,647	1,631	274	1,905	408	137	201	
Delaware, Lackawanna and Western Railroad Co.,.....	9		9	12		12	82,733	1,465	677	2,142	163		122	
Scranton Coal Co.,.....	9		9	5		5	62,799	874	193	1,067	218	193	109	
Stearns Creek Coal Co., Ltd.,.....	4	1	5	8		8	57,379	714	201	915	238		143	
Lackawanna Coal Co., Ltd.,.....	3		3	5		5	103,628	458	288	746			153	
Mount Jessup Coal Co., Ltd.,.....				2		2	80,091	286	82	468	193		193	
Moosic Mountain Coal Co.,.....	2		2	2		2	100,571	276	147	423		74		
Dolph Coal Co., Ltd.,.....		2	2											
Totals and averages for district, ...	30	6	36	61	3	64	77,062	9,574	2,810	12,384	319	468	137	937

TABLE C.—Classification of Fatal Accidents Inside and Outside of Mines

	Months												Percentages	
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	
Causes of Accidents Inside														
Falls of coal, .....	12	5	2	.....	.....	2	2	1	1	2	1	2	1	3.33
Falls of roof, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	21	70.00
Mine cars, .....	1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	1	4	13.34
Explosions of powder and dynamite, .....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	3.33
Blasts, premature and otherwise, .....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	2	6.67
Falling into shafts, ...	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	3.33
Totals, .....	3	6	3	.....	1	4	3	1	1	2	3	3	30	100.00
Causes of Accidents Outside														
Cars, .....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	2	33.33
Machinery, .....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	2	33.33
Suffocation in chutes, etc., .....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	33.34
Totals, .....	1	.....	2	.....	.....	.....	1	1	.....	.....	1	.....	6	100.00
Grand totals inside and outside, .....	4	6	5	.....	1	4	4	2	1	2	4	3	36	.....

TABLE D.—Classification of Non-Fatal Accidents Inside and Outside of Mines

	Months												Percentages	
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	
Causes of Accidents Inside														
Falls of coal, .....		1						1					2	3.28
Falls of roof, .....	1		5		2	2	1	2	3	7	2	3	28	45.90
Mine cars, .....	2	1	2			4	2		4	3	2		20	32.78
Explosions of powder and dynamite, .....		1	1			1	1						4	6.56
Blasts, premature and otherwise, .....	1						1		2		1		5	8.20
Mules, .....						1						1	2	3.28
Totals, .....	1	3	8		2	8	5	3	9	10	5	4	61	100.00
Causes of Accidents Outside														
Cars, .....					1				1			1	3	100.00
Totals, .....					1				1			1	3	100.00
Grand totals inside and outside, .....	4	3	8		3	8	5	3	10	10	5	5	64	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Miners, .....	1	4	2	....	1	3	2	1	1	1	....	1	17
Miners' laborers, .....	1	1	....	....	....	1	1	....	....	....	3	2	9
Drivers and runners, .....	1	....	1	....	....	....	....	....	....	....	....	....	2
Company men, .....	....	1	....	....	....	....	....	....	....	1	....	....	2
Totals, .....	3	6	3	....	1	4	3	1	1	2	3	3	30
Outside													
Engineers and firemen, .....	....	....	....	....	....	....	....	....	....	....	1	....	1
Slatepickers (boys), .....	....	....	1	....	....	....	....	1	....	....	....	....	2
Oilers, .....	1	....	....	....	....	....	....	....	....	....	....	....	1
Laborers, .....	....	....	1	....	....	....	....	....	....	....	....	....	1
Company men, .....	....	....	....	....	....	....	1	....	....	....	....	....	1
Totals, .....	1	....	2	....	....	....	1	1	....	....	1	....	6
Grand totals inside and outside, .....	1	6	5	....	1	4	4	2	1	2	4	3	36

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Miners, .....	3	2	2	....	1	1	3	1	6	3	1	1	24
Miners' laborers, .....	....	....	4	....	....	2	....	2	....	4	3	....	17
Drivers and runners, .....	1	....	1	....	....	3	2	....	1	....	1	1	10
Doorboys and helpers, .....	....	....	....	....	....	....	....	....	....	2	....	....	2
Company men, .....	....	1	1	....	1	....	....	....	....	....	....	....	3
Footmen, .....	....	....	....	....	....	1	....	....	....	1	....	....	2
Brakemen, .....	....	....	....	....	....	1	....	....	....	....	....	....	1
Cable boys, .....	....	....	....	....	....	....	....	....	1	....	....	....	1
Reel boys, .....	....	....	....	....	....	....	....	....	1	....	....	....	1
Totals, .....	4	3	8	....	2	8	5	3	9	10	5	4	61
Outside													
Slatepickers (boys), .....	....	....	....	....	....	....	....	....	1	....	....	....	1
Company men, .....	....	....	....	....	1	....	....	....	....	....	....	....	1
Laborers, .....	....	....	....	....	....	....	....	....	....	....	1	....	1
Totals, .....	....	....	....	....	1	....	....	....	1	....	....	1	3
Grand totals inside and outside, .....	4	3	8	....	3	8	5	3	10	10	5	5	64

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	Totals
American, .....	1	...	1	...	...	1	1	1	...	...	...	5
English, .....	...	...	...	...	1	...	...	...	...	...	...	1
Welsh, .....	...	...	...	...	...	1	...	...	...	...	...	1
Irish, .....	...	...	...	...	1	...	1	...	...	2	1	4
Polish, .....	1	4	1	...	...	...	1	1	1	...	2	13
Italian, .....	1	...	1	...	...	...	...	...	...	...	...	3
Slavonian, .....	...	1	1	...	...	...	1	...	...	...	1	5
Lithuanian, .....	...	1	...	...	...	1	...	...	...	...	...	2
Austrian, .....	...	...	1	...	...	...	...	...	...	...	...	1
Russian, .....	1	...	...	...	...	...	1	...	...	...	...	2
Totals, .....	4	6	5	...	1	4	4	2	1	2	4	36

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	Totals
American, .....	...	1	...	...	1	2	1	...	3	...	1	9
English, .....	...	...	2	...	...	1	...	...	...	...	...	4
Irish, .....	...	...	...	...	...	...	...	1	1	...	...	1
German, .....	...	...	...	...	...	...	...	1	...	...	...	1
Polish, .....	...	...	...	...	1	4	2	1	2	2	...	20
Hungarian, .....	...	...	...	...	...	...	...	...	1	1	...	1
Italian, .....	...	...	...	...	...	1	...	...	...	1	2	6
Slavonian, .....	...	1	2	...	...	...	...	...	2	1	...	9
Lithuanian, .....	...	1	...	...	...	...	1	1	1	1	...	7
Austrian, .....	1	...	...	...	...	...	...	...	...	1	...	2
Russian, .....	1	...	...	...	1	...	...	...	1	1	1	5
Totals, .....	4	3	8	...	2	8	5	8	10	10	5	64



TABLE I.—Operators and mines, kind of openings, type and size of fans, size of furnaces, volume of air produced by fan or furnace per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	Kind of opening	Gaseous or non-gaseous	Method of ventilation	Diameter of fan in feet and inches	Width of blades in feet and inches	Depth of blades in feet and inches	Number of revolutions per minute	Water gauge developed—in inches	Name of fan	Power used	Number of splits of air currents	Number of cubic feet of air per minute entering the mine at inlet	Total number of cubic feet of air per minute circulating in all the splits	Number of cubic feet of air per minute passing out at outlet	Number of persons employed inside
Delaware and Hudson Co. (Inside) ; Hudson Coal Co. (Outside)															
Olyphant Colliery:															
Miles Slope	Slope	Gaseous	Fan	20	5.00	4.00	90	2.20	Gubal.	Steam	4	90,700	81,600	93,000	196
Grassy Island No. 1	Shaft	Non-gas.	Fan	18	5.00	1.00	70	1.00	Gubal.	Steam	3	53,255	46,410	62,500	188
Grassy Island No. 2	Shaft	Gaseous	Fan	4							6	107,330	101,335	113,385	300
Grassy Island No. 3	Slope	Gaseous	Fan	28	7.00	8.00	75	4.00	Gubal.	Steam	8	131,126	161,186	188,333	317
Eddy Creek Colliery:															
Olyphant	Shaft	Gaseous	Fan	22	5.00	5.00	90	2.20	Gubal.	Steam	9	191,473	143,973	242,456	362
Number 4	Drift	Non-gas.	Fan	8	3.00	2.50	125	2.00	Gubal.	Steam	2	44,270	39,720	50,450	82
Birdseye S. C. Vein	Drift	Non-gas.	Fan	8	3.00	2.00	200	2.00	Gubal.	Electricity	3	57,376	40,963	63,003	100
Birdseye, Clark Vein	Drift	Non-gas.	Fan	16	3.00	2.00	200	1.00	Gubal.	Electricity	2	29,231	22,830	35,295	30
Lefferts Creek Colliery:															
No. 1	Shaft	Gaseous	Fan	20	6.00	6.00	80	2.50	Gubal.	Steam	5	105,660	97,620	121,040	216
No. 2	Fan	Gaseous	Fan	20	6.00	6.00	75	2.60			4	76,490	70,580	86,900	139
No. 3	Fan	Gaseous	Fan	22	5.00	5.00	90	4.66				108,900	82,800	120,900	208
Marvine Colliery:															
14 Foot and Diamond Veins															
Clark Vein	Shaft	Gaseous	Fan	20	6.00	6.00	66	1.40	Gubal.	Steam	6	209,700	193,260	218,300	274
Dumore Vein				28	6.00	6.00	76	1.40			3	94,900	86,200	102,400	80
Delaware, Lackawanna and Western Railroad Co.				20	7.00	8.00	66	1.40			5	138,400	126,600	151,700	175
Storrs Colliery:															
No. 1	Shaft	Gaseous	Fan	25	8.00	6.00	66	2.29	Gubal.	Steam	11	198,497	161,026	227,243	498
No. 2	Fan	Gaseous	Fan	16	6.00	4.00	120	1.70			10	180,110	155,139	199,337	422
No. 3	Fan	Gaseous	Fan	25	8.00	6.00	67	1.30			9	131,698	112,310	153,634	291

† Ventilated by fan at Grassy Island No. 2 slope.

Scranton Coal Co. Ontario Colliery:	Tunnel, .. Shaft, .. Shaft, .. Shaft, .. Tunnel, ..	{ Fan, ... { Fan, ... { Fan, ... { Natural, ..	Non-gas, ..	14	3.25	3.50	100	1.00	{ Gulbal, ... }	{ Steam, ... }	67,000	53,300	70,800	141
				12	3.00	3.00	100	1.00			60,500	52,900	66,700	135
				20	6.00	6.25	65	1.20			72,650	65,830	81,120	209
				15	4.50	4.00	75	1.00			35,200	26,200	48,600	65
Johnson Colliery:	Shaft, .. Shaft, .. Shaft, .. Shaft, ..	{ Fan, ... { Fan, ... { Fan, ... { Fan, ...	Gaseous, .. Gaseous, .. Non-gas, .. Gaseous, ..	30	10.00	8.00	55	1.60	{ Gulbal, ... Gulbal, ... Gulbal, ... Gulbal, ...	{ Steam, ... Steam, ... Electricity, .. Steam, ...	206,980	168,110	207,557	194
				18	5.00	6.00	110	2.00			88,500	44,850	98,900	194
				10	8.00	3.00	104	1.50			14,000	11,600	15,125	28
				30	10.00	10.00	35	.90			53,000	46,000	65,000	85
Sterrick Creek Coal Co., Ltd.	Drift, .. Shaft, .. Shaft, .. Shaft, ..	{ Fan, ... { Fan, ... { Fan, ... { Fan, ...	Non-gas, .. Gaseous, .. Gaseous, .. Gaseous, ..	20	4.50	4.50	70	1.30	{ Gulbal, ... }	{ Steam, ... }	43,500	34,100	43,850	114
				25	5.00	5.50	65	.80			74,900	59,500	76,000	250
				10	3.50	3.50	175	.80			51,015	27,025	55,060	146
				25	5.50	5.50	65	.80			41,100	27,630	45,255	110
Lackawanna Coal Co., Ltd. Lackawanna Colliery:	Shaft, .. Shaft, .. Shaft, .. Shaft, ..	{ Fan, ... { Fan, ... { Fan, ... { Fan, ...	Gaseous, .. Gaseous, .. Gaseous, .. Gaseous, ..	20	5.00	4.00	85	.60	{ Gulbal, ... Gulbal, ...	{ Steam, ... Steam, ...	51,050	46,950	52,225	145
				22	10.00	8.00	80	2.70			58,200	52,700	73,100	254
				18	6.00	4.50	100	2.00			53,400	41,100	70,000	104
				10	4.00	4.50	100	1.00			99,750	86,050	109,450	311
Mount Jessup Coal Co., Ltd. Mount Jessup Colliery: Peck's Shaft.	Shaft, .. Shaft, .. Shaft, .. Shaft, ..	{ Fan, ... { Fan, ... { Fan, ... { Fan, ...	Gaseous, .. Gaseous, .. Gaseous, .. Gaseous, ..	20	6.00	4.50	60	1.50	{ Gulbal, ... Gulbal, ...	{ Steam, ... Steam, ...	58,430	34,520	58,540	60
				20	5.00	4.00	60	1.50			60,950	37,500	63,820	88
				10	4.00	4.50	100	1.00			99,750	86,050	109,450	311
				10	4.00	4.50	100	1.00			99,750	86,050	109,450	311
Moosic Mountain Coal Co. Marshwood Colliery: Marshwood, ..	Drift, .. Shaft, .. Shaft, .. Shaft, ..	{ Fan, ... { Fan, ... { Fan, ... { Fan, ...	Non-gas, .. Gaseous, .. Gaseous, .. Gaseous, ..	20	6.00	4.50	60	1.50	{ Gulbal, ... Gulbal, ...	{ Steam, ... Steam, ...	58,430	34,520	58,540	60
				20	5.00	4.00	60	1.50			60,950	37,500	63,820	88
				10	4.00	4.50	100	1.00			99,750	86,050	109,450	311
				10	4.00	4.50	100	1.00			99,750	86,050	109,450	311
Dolph Coal Co., Ltd. Dolph Colliery: Dolph, ..	Slope, .. Slope, .. Slope, .. Slope, ..	{ Fan, ... { Fan, ... { Fan, ... { Fan, ...	Non-gas, .. Non-gas, .. Non-gas, .. Non-gas, ..	20	6.00	4.50	60	1.50	{ Gulbal, ... Gulbal, ...	{ Steam, ... Steam, ...	58,430	34,520	58,540	60
				20	5.00	4.00	60	1.50			60,950	37,500	63,820	88
				10	4.00	4.50	100	1.00			99,750	86,050	109,450	311
				10	4.00	4.50	100	1.00			99,750	86,050	109,450	311

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	Name of General Superintendent	Post Office	Name of Superintendent	Post Office	Railroad to Mine
Delaware and Hudson Co. (Inside), Hudson Coal Co. (Outside)						
Olyphant, .....	Lackawanna,	C. C. Rose,	Scranton,	E. R. Pettibone,	Dorranecton,	Delaware and Hudson
Lehigh Creek, .....						
Marine, .....						
Leggett Creek Washery, .....						
Delaware, Lackawanna and Western Railroad Co.						
Storrs Washery, .....	Lackawanna,	R. A. Phillips,	Scranton,	Walter Reese,	Scranton,	D. L. and W.
Scranton Coal Co.						
Ontario, .....	Lackawanna,	W. L. Allen,	Peckville,	{ J. Bokheiser, Inside, J. J. Aitken, Outside, J. J. Aitken, Inside, Paul Young, Inside, J. J. Aitken, Outside, J. J. Aitken, .....	Olyphant, Friedburg, Friedburg, Scranton, Friedburg, Friedburg, Friedburg,	N. Y. O. and W.
Edison, .....						
Richmond No. 3, .....						
Ontario Washery, .....						
Storrick Creek Coal Co., Ltd.	Lackawanna,	F. H. Homelright,	Scranton,	Joseph Reese,	Olyphant,	Erie
Storrick Creek, .....						
Lackawanna Coal Co., Ltd.	Lackawanna,	F. H. Homelright,	Scranton,	Joseph Reese,	Olyphant,	D. L. and W. and Erie
Lackawanna, .....						
Mount Jessup, .....	Lackawanna,			John T. Cartwright,	Peckville,	D. L. and W., D. and H., and N. Y. O.
Moosie Mountain Coal Co.						
Marshwood, .....	Lackawanna,	Chas. P. Ford,	Marshwood,	Chas. P. Ford,	Marshwood,	D. L. and W.
Dolph Coal Co., Ltd.	Lackawanna,	W. G. Robertson,	Scranton,	W. G. Robertson,	Scranton,	Erie
Dolph, .....						

TABLE 2.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured, quantity of powder, dynamite and permissible explosives used, etc.

Names of Operators and Collieries	County	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employees	Total production of coal in tons	Number of days worked	Number of employees	Number of fatal accidents	Number of non-fatal accidents	Explosives			Number of horses and mules
										Number of pounds of powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used	
Delaware and Hudson Co. (Inside), Hudson Coal Co. (Outside)													
Olyphant, .....	Lackawanna, {	527,347	104,766	12,550	644,663	204	1,679	4	5	1,339,850	27,494	.....	137
Early Creek, .....		452,871	4,063	88	457,022	314	1,287	2	9	.....	.....	.....	69
Leggett's Creek, .....		599,889	4,440	16,051	316,080	212	867	1	8	494,600	26,672	.....	71
Marvine, .....		566,022	34,591	4,297	304,910	219	855	2	4	484,800	32,775	.....	80
Leggett's Creek Washery, .....	Lackawanna, ..	1,545,829	142,860	32,986	1,722,675	.....	4,698	9	26	2,319,250	86,911	.....	357
Totals, .....		357	90,363	.....	91,820	.....	20	.....	.....	.....	.....	.....	.....
Delaware, Lackawanna and Western Railroad Co.		1,546,786	234,223	32,986	1,813,995	.....	4,718	9	26	2,319,250	86,941	.....	357
Storrs, .....	Lackawanna, {	678,387	43,834	6,088	728,309	233	1,892	6	8	921,175	53,662	.....	139
Storrs Washery, .....		78,171	6,633	.....	84,804	111	15	.....	.....	.....	.....	.....	.....
Totals, .....		756,561	50,527	6,088	813,176	.....	1,905	6	8	921,175	53,662	.....	139
Scranton Coal Co.													
Ontario, .....	Lackawanna, {	242,074	58,665	2,374	298,113	207	945	4	2	198,500	131,000	.....	114
Johnson, .....		227,696	51,301	2,890	280,627	180	876	2	9	166,250	33,273	.....	91
Richmond No. 3, .....		39,680	17,050	2,515	59,255	85	257	2	1	25,000	1,800	.....	21
Ontario Washery, .....	Lackawanna, ..	507,460	122,016	8,819	638,295	.....	2,078	9	12	389,750	166,075	.....	226
Totals, .....		95,374	15,000	4,925	115,299	161	64	.....	.....	.....	.....	.....	.....
Included in Olyphant Colliery.		602,834	137,016	13,744	753,594	.....	2,142	9	12	389,750	166,075	.....	226





TABLE 2.—Part 2

Names of Operators	County	Number of Boilers				Locomotives			Number of steam engines of all classes	Total horse power	Number of pumps delivering water to surface	Capacity in gallons per minute	Quantity delivered to surface per minute—gallons	Number of electric dynamos	Number of air compressors
		Cylindrical	Horse power	Tubular	Horse power	Steam	Air	Electric							
Delaware and Hudson Co. (Inside), Hud- son Coal Co. (Outside), and Western Railroad Co., ..... Scranton Coal Co., ..... Sterrick Creek Coal Co., Ltd., ..... Lackawanna Coal Co., Ltd., ..... Mount Jessup Coal Co., Ltd., ..... Monroe Mountain Coal Co., ..... Dolph Coal Co., Ltd., .....	Lackawanna.	40 6 25 ..... ..... ..... ..... .....	1,113 750 665 ..... ..... ..... ..... .....	48 8 35 10 12 8 13	10,550 2,400 4,200 1,800 2,310 2,940 600 2,320	10 5 9 6 2 2 1 3	59 ..... ..... ..... ..... ..... ..... .....	..... 21 5 ..... 8 ..... ..... 4	173 27 32 19 24 16 35	11,560 2,150 11,487 2,440 2,530 2,780 300 1,755	17 3 15 3 5 4 5 5	21,800 6,060 10,680 2,700 8,500 3,300 1,550 1,980	8,100 4,066 8,076 2,200 4,800 1,600 1,162 1,000	3 12 6 2 2 ..... 1 3	18 ..... 1 2 ..... ..... 3 24
Totals, .....	.....	71	2,528	142	27,120	38	59	38	382	33,502	59	59,570	31,004	29	24

TABLE 3.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside										Outside										Grand total inside and outside	
		Mine foremen	Assistant mine foremen	Fire bosses and assistants	Miners	Miners' laborers	Drivers and runners	Doorboys and helpers	Pumpmen	Company men	All other employes	Total inside	Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Slatepickers (boys)	Slatepickers (men)	Bookkeepers and clerks	All other employes	Total outside		
Delaware and Hudson Co. (Inside), Hudson Coal Co. (Outside), Delaware, Lackawanna and Western Railroad Co., .....	Lackawanna.	6	7	28	1,190	1,332	506	50	22	511	118	3,770	....	8	46	154	57	163	12	508	948	4,718	
Scranton Coal Co., .....		4	3	11	526	630	128	22	10	190	107	1,631	....	2	12	40	75	....	4	141	274	1,905	
Sterrick Creek Coal Co., Ltd., .....		4	9	8	488	396	246	33	31	....	250	1,465	....	4	39	104	102	155	4	269	677	2,142	
Lackawanna Coal Co., Ltd., .....		2	3	5	294	326	104	18	4	9	109	874	1	1	9	17	26	25	3	111	133	1,067	
Mount Jessup Coal Co., Ltd., .....		2	3	4	251	247	42	17	12	3	133	714	1	1	23	19	44	14	3	96	201	915	
Moessic Mountain Coal Co., .....		1	1	4	153	180	55	11	8	45	....	458	1	3	15	26	73	17	3	150	288	746	
Dolph Coal Co., Ltd., .....		1	2	....	153	122	57	6	6	22	17	386	1	....	13	15	....	....	2	52	82	468	
Totals, .....		22	20	60	3,190	3,314	1,167	157	95	737	742	9,574	5	26	174	398	388	392	37	1,396	2,810	12,384	

TABLE 3.---Part 2

Names of Operators	County	Average Number of Days Worked in Breaker												
		January	February	March	April	May	June	July	August	September	October	November	December	Total
Delaware and Hudson Co. (Inside), Hudson Coal Co. (Outside),	Lackawanna,	22	21	20	.....	6	22	22	22	18	18	20	21	212
Delaware, Lackawanna and Western Railroad Co.,		20	21	22	.....	6	21	23	23	21	23	22	21	223
Scranton Coal Co.,		14	14	14	.....	3	12	14	17	16	18	17	18	187
Sterrick Creek Coal Co., Ltd.,		25	24	26	.....	7	23	24	25	24	26	25	24	253
Lackawanna Coal Co., Ltd.,		25	24	26	.....	7	23	24	25	24	26	25	24	253
Mount Jessup Coal Co., Ltd.,		20	19	20	.....	5	21	21	22	20	22	24	21	213
Moasic Mountain Coal Co.,		20	21	20	.....	6	22	22	23	21	23	22	21	221
Dolph Coal Co., Ltd.,		14	14	16	.....	.....	11	11	11	11	13	12	13	126
									</					



TABLE 4.—Fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 6	George Roman, ...	Russian, ...	Driver, ...	18	S.	...	...	Sterrick Creek, ...		Killed by cars on gangway road. He was riding out the gangway on a trip of cars, and in some unknown manner fell under them.
8	John P. Schivitzet, ...	American, ...	Oiler, ...	16	S.	...	...	Storts, ...		Killed by machinery. A blade of the ventilating fan became loose and struck him. Outside.
10	Adam Devenoski, ...	Polish, ...	Miner, ...	33	M.	1	1	Marshwood, ...		Killed by fall of bell roof in face of chamber.
23	Virginia Pastinti, ...	Italian, ...	Laborer, ...	19	S.	...	...	Ontario, ...		Killed by fall of roof in face of chamber while examining after a blast.
Feb 5	John Kardino, ...	Polish, ...	Laborer, ...	35	M.	1	2	Lackawanna, ...		Killed by fall of bell roof in face of chamber.
	John Sleva, ...	Polish, ...	Miner, ...	28	S.	...	...	Ontario, ...		Killed by fall of bell roof in face of chamber.
9	Wassil Zimminech, ...	Slavonian, ...	Company man.	40	M.	1	2	Marshwood, ...	Lackawanna	Fatally injured by cars on plane. He was engaged as door-tender and had just opened the door to allow a trip to pass through when a driver bumped a car over the head of the plane. The noise of the passing trip prevented his hearing the runaway.
10	John Zuliski, ...	Polish, ...	Miner, ...	47	M.	1	2	Johnson, ...		Killed by fall of roof in face of chamber. He fired a blast and started to work before making an examination.
	Joseph Kowleck, ...	Polish, ...	Miner, ...	35	M.	1	5	Marvine, ...		Killed by fall of roof in face of chamber. He fired a blast and started to work before making an examination.
16	Alex. Mojacko, ...	Lithuanian, ...	Miner, ...	36	M.	1	4	Marvine, ...		Killed by fall of roof in face of chamber. He fired a blast and started to work before making an examination.
March 6	John Lawrence, ...	Slavonian, ...	Laborer, ...	46	M.	1	...	Dolph, ...		Smothered in coal pockets. He went into the pockets and the chutes were drawn before he could get out. Outside.

Mar.	8	George Wassil, .....	Polish, .....	Slatepicker,	18	S.	....	....	Sterrick Creek, ..	Smothered in coal pockets. The investigation failed to ascertain what prompted him to go there as no one saw him after he left the picking room. Outside.
	9	George McNeal, .....	Austrian, ..	Miner, ....	53	M.	1	....	Sterrick Creek, ..	Fatally injured by fall of slip roof in face of chamber.
	29	Otello Chickarelli, ....	Italian, .....	Miner, ....	23	S.	....	....	Lackawanna, ....	Killed by fall of bell roof near face of chamber.
	30	Frank Pretor, .....	American, ..	Driver, ....	49	S.	....	....	Storrs, .....	Fatally injured on gangway road by derailled car.
May	27	Frederick Balderman, ..	English, ....	Miner, ....	45	M.	1	2	Olyphant, .....	Fatally burned by powder at the box. He was making cartridge and a spark fell into the powder.
June	8	Edward Owen, .....	American, ..	Miner, ....	54	M.	1	....	Olyphant, .....	Killed by blast in face of chamber. He went into the next chamber which was idle, to see if it was safe to fire. He reported "All right" to his partner, the squib missed and his partner told him that he would try another at once and supposed that Owen would remain in a safe place, but for some unknown reason Owen went directly in front of the blast. Killed by falling into shaft. He, with several other men, was being hoisted in the shaft. Someone accidentally moved a piece of wood rail into the shaft, so that it caught in the fans in passing and Morgan was struck by the uptipping of the rail.
	11	William Morgan, .....	Welsh, .....	Laborer, ..	25	M.	1	1	Storrs, .....	Killed by fall of bell roof at face of chamber.
	22	Timothy Hayes, .....	Irish, .....	Miner, ....	56	M.	1	2	Storrs, .....	Killed by fall of bell roof at face of chamber.
July	3	George Miller, .....	Lithuanian, ..	Miner, ....	43	M.	1	3	Legitts Creek, ..	Fatally injured by blast at face of chamber while assisting to tamp a hole.
	18	Michael Sincavage, ....	Polish, .....	Laborer, ..	35	S.	....	....	Storrs, .....	Killed by cars. He was cleaning tracks and did not get out of the way of the locomotive in time. He knew the engine was coming outside.
	25	Michael Bozenski, ....	Russian, ....	Miner, ....	35	M.	1	2	Lackawanna, ....	Killed by fall of roof at face of chamber while drilling a hole.
	30	George Hobrick, .....	Slavonian, ..	Miner, ....	48	M.	1	8	Sterrick Creek, ..	Fatally injured by fall of bell roof at face of chamber.
Aug.	5	John Thomas, .....	American, ..	Slatepicker,	17	S.	....	....	Storrs, .....	Killed by falling under cars while playing with a truck.
	24	Belas Dumitroski, ....	Polish, .....	Miner, ....	45	M.	1	5	Johnson, .....	Killed by fall of bell roof in face of chamber.
Sept.	21	Stephen Matiskin, ....	Polish, .....	Miner, ....	36	M.	1	2	Olyphant, .....	Fatally injured by fall of bell roof at face of chamber.
Oct.	14	John Daley, .....	Irish, .....	Company man,	30	M.	1	1	Ontario, .....	Killed by fall of bell roof on slope while renewing pulley grooves.
	25	Anthony Murphy, .....	Irish, .....	Miner, ....	40	M.	1	5	Sterrick Creek, ..	Killed by fall of bell roof at face of chamber.

Lackawanna,

TABLE 4—Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Nov. 11	Stephen Barrick, ....	Polish, .....	Laborer, ..	26	M.	1	1	Richmond No. 3,		Killed by fall of roof at face of chamber. The miner testified that he examined the roof with a drill but it did not yield to sound.
16	August Soverjeski, ....	Polish, .....	Laborer, ..	51	M.	1	1	Richmond No. 3,		Killed by fall of bell roof at face of chamber.
17	Edward Connolly, .....	Irish, .....	Engineer, ..	50	M.	1	1	Dolph, .....		Killed by machinery. His clothing caught in slatting while he was oiling. Outside.
18	Andrew Sinan, .....	Slavonian, ..	Laborer, ..	27	S.	....	....	Ontario, .....	Lackawanna.	Killed by fall of slip top coal at face of chamber.
Dec. 5	Felix Adamski, .....	Polish, .....	Miner, ..	40	M.	1	....	Eddy Creek, .....		Fatally injured by fall of roof at face of chamber while replacing a discharged prop.
19	Joseph Wasiko, .....	Slavonian, ..	Laborer, ..	33	M.	1	....	Eddy Creek, .....		Killed by cars on slope. A coupling broke allowing the cars to run away.
	John Kolkofski, .....	Polish, .....	Laborer, ..	48	S.	....	....	Johnson, .....		Killed by fall of bell roof at face of chamber.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 20	Nicholas Suradish, ...	Russian, ....	Driver, .....	27	M.	Eddy Creek, .....	Lackawanna,	Leg fractured and hip dislocated by cars at foot of plane. A coupling broke, causing a runaway.
22	Joseph Septock, .....	Austrian, ...	Miner, .....	35	M.	Lackawanna, .....		Leg fractured by being struck by cars at face of chamber. A mule's harness caught a car in passing and derailed it.
25	Frank Silver, .....	Polish, ....	Miner, .....	29	M.	Johnson, .....		Ankle dislocated by fall of rock at face of chamber. A piece of rock slid from the gob.
26	John Rubba, .....	Polish, ....	Miner, .....	32	M.	Storrs, .....		Rib fractured by blast on gangway. A piece of coal rebounded from the opposite rib, and struck him while he was waiting for the blast to go off.
Feb. 8	Joseph Belch, .....	Lithuanian, .....	Miner, .....	47	M.	Marvine, .....		Internally injured by fall of coal in face of chamber. He fired a blast and started to work before making an examination.
23	Patrick Dougherty, ...	American, ..	Company man, ..	35	M.	Marvine, .....		Leg fractured by cars at foot of shaft. His foot was caught in tracks.
26	Angelo Chiezolino, ...	Italian, ....	Miner, .....	34	M.	Lackawanna, .....		Burned by powder in chamber. He was pushing a cartridge of powder into the hole when it exploded.
March 1	Charles Reely, .....	English, ....	Company man, ..	31	M.	Lackawanna, .....		Leg fractured by being caught by cars while walking up a plane.
4	Wallick Shamitnich, ...	Polish, ....	Laborer, .....	26	M.	Sterrick Creek, .....		Back injured by fall of roof at face of chamber. He was examining after a blast.
5	George Adzems, .....	Slavonian, .	Driver, .....	23	M.	Sterrick Creek, .....		Leg fractured by cars on gangway road. Through a misunderstanding, the runner ran a car out of a chamber and caught the driver as he was coming in.
7	Andrew Killen, .....	Polish, ....	Laborer, .....	30	S.	Lackawanna, .....	Lackawanna,	Foot fractured by fall of slip roof in face of chamber.
19	John Mout, .....	English, ....	Miner, .....	32	M.	Olyphant, .....		Face and hands burned by powder near face of chamber. He was putting powder into a hole when a spark from his lamp set fire to it.





July	1	James Chluchucka, ....	Polish, .....	Miner, .....	40	M.	Eddy Creek, .....	Rib fractured by fall of roof at face of chamber while examining after a blast.
	3	Julius Kuliek, .....	Lithuanian, .....	Miner, .....	52	M.	Storrs, .....	Leg fractured while assisting miner to tamp a hole at face of chamber.
	18	Adam Smorick, .....	Polish, .....	Miner, .....	51	M.	Johnson, .....	Face and arms burned by powder at face of chamber. The laborer's lamp fell off his cap while they were preparing to blast.
	19	Henry Gresham, .....	American, .....	Driver, .....	16	S.	Eddy Creek, .....	Leg fractured by cars on gangway road. The door-tender did not get the door open quickly enough, and the car caught it in passing through.
	22	George Straval, .....	Polish, .....	Driver, .....	22	S.	Mount Jessup, .....	Leg fractured by falling under car near foot of slope while unbitching mule.
Aug.	5	Michael Brecon, .....	Polish, .....	Laborer, .....	44	M.	Johnson, .....	Leg fractured by fall of slip roof in face of chamber.
	21	Alex Rackavich, .....	Lithuanian, .....	Miner, .....	41	M.	Storrs, .....	Leg fractured by fall of coal in chamber.
	22	Thomas Belcoski, .....	German, .....	Laborer, .....	53	M.	Johnson, .....	Legs fractured by fall of slip roof in face of chamber.
Sept.	3	Michael Cravits, .....	Russian, .....	Cable-boy, .....	20	S.	Lackawanna, .....	Leg fractured by being struck by a car that became derailed at a latch on gangway.
	12	Peter Racavage, .....	Lithuanian, .....	Miner, .....	45	M.	Richmond No. 3, ...	Rib and wrist fractured by fall of roof at face of chamber. He failed to bar it down.
		William Drozkieliez, ..	Polish, .....	Miner, .....	37	M.	Marvue, .....	Skull fractured by blast at face of chamber. He thought the squib had missed and returned just as it exploded.
	14	Stephen Regula, .....	Slavonian, .....	Miner, .....	21	M.	Storrick Creek, .....	Leg fractured and back contused by cars on gangway road. He was bumped by a trip while uncoupling cars.
	16	Peter Coliski, .....	Polish, .....	Miner, .....	54	M.	Marshwood, .....	Leg fractured by blast in abandoned works. He was away from his duties.
	18	John Yorkman, .....	Slavonian, .....	Miner, .....	43	M.	Mount Jessup, .....	Hip fractured by fall of roof at face of chamber. He failed to bar it down.
	26	Patrick McGonbrick, ..	Irish, .....	Miner, .....	40	M.	Legitts Creek, .....	Hip dislocated by fall of slip roof at face of chamber.
		Robert Griffiths, .....	American, ..	Runner, .....	20	S.	Legitts Creek, .....	Internally injured by being struck by derailed car on gangway road.
	28	James Bowder, .....	American, ..	Reel-boy, .....	13	S.	Storrs, .....	Leg fractured by cars on gangway road. The car upon which he was riding struck a car in passing that had not been pushed far enough into a switch.
		Joseph Conahan, .....	American, ..	Slatepicker, .....	14	S.	Legitts Creek, .....	Foot lacerated by cars while playing with them. One died.
Oct.	3	Stephen Mieruse, ....	Austrian, ...	Laborer, .....	38	M.	Olyphant, .....	Leg fractured by fall of roof at face of chamber while standing a prop under roof.
	4	John Ballow, .....	Slavonian, ..	Footman, .....	39	M.	Ontario, .....	Leg fractured by cars at foot of shaft. He was lamed by a trip while pushing a car onto cage.
		Joseph Angelus, .....	Italian, .....	Door-tender, .....	17	S.	Marshwood, .....	Leg fractured by cars on gangway road. He fell under car upon which he was riding.
	5	Joseph Plascovich, ...	Lithuanian, ..	Miner, .....	23	S.	Storrs, .....	Back injured by fall of slip roof at face of chamber.

Lackawanna.

TABLE 5-- Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Oct.	14 William Gabler, .....	Polish, .....	Door-tender, .....	50	M.	Storrs, .....	Lackawanna.	Leg fractured by being struck by derailed car on gangway road.
	19 William Polowski, ...	Slavonian, ...	Miner, .....	50	M.	Sterrick Creek, .....		Ribs fractured by fall of bell roof at face of chamber.
	21 Michael Sispatowski, .	Russian, .....	Laborer, .....	24	S.	Legitts Creek, .....		Itibs fractured by fall of roof at face of chamber.
	23 Anthony Kramis, .....	Lithuanian, ..	Laborer, .....	21	S.	Legitts Creek, .....		Arm fractured by fall of roof at face of chamber.
	25 William Angolandish, .	Polish, .....	Miner, .....	54	M.	Storrs, .....		Leg fractured by fall of roof at face of chamber.
	30 Michael Comenski, ....	Russian, .....	Laborer, .....	26	M.	Eddy Creek, .....		Leg fractured by fall of roof at face of chamber.
Nov.	11 Anthony Condiat, .....	Italian, .....	Laborer, .....	45	M.	Legitts Creek, .....		Leg fractured by fall of roof at face of chamber while standing a prop under it.
	14 Joseph Chiponis, .....	Lithuanian, ..	Miner, .....	37	M.	Mount Jessup, .....		Leg fractured by fall of bell roof at face of chamber.
	22 Joseph Furey, .....	American, .....	Runner, .....	18	S.	Olyphant, .....		Leg fractured by falling under car on gangway road while trying to mount the bumper.
	25 Michael Rubel, .....	Russian, .....	Laborer, .....	24	S.	Olyphant, .....		Leg fractured by being struck by car at face of chamber. The mule's harness caught the car in passing and derailed it.
	29 Michael Speller, .....	Slavonian, .....	Laborer, .....	43	M.	Eddy Creek, .....		Leg fractured by blast at face of chamber. He misunderstood arrangements with the next miner, who was to fire two blasts. He went back before the second blast went off.
Dec.	3 Isadore Borden, .....	Polish, .....	Miner, .....	41	M.	Johnson, .....		Ankle fractured by fall of roof at face of chamber. He neglected to take it down.
	4 Silvester Tatala, .....	Italian, .....	Laborer, .....	22	S.	Sterrick Creek, .....		Hip dislocated by fall of slip roof at face of chamber.
	10 Alex. Krett, .....	Polish, .....	Driver, .....	18	S.	Eddy Creek, .....		Leg fractured by a kick from a mule on chamber road.

Dec. 14	Frank Shargey, .....	Polish, .....	Laborer, .....	.....	20	S.	Johnson, .....	.....	} Lackawanna,	Internally injured by fall of slip roof at face of chamber. Arm fractured by falling under cars on top of plane while unhitching rope. Outside.
16	Joseph Longo, .....	Italian, .....	Laborer, .....	.....	23	S.	Eddy Creek, .....	.....		

## CONDITION OF COLLIERIES

## DELAWARE AND HUDSON COMPANY (INSIDE)

## HUDSON COAL COMPANY (OUTSIDE)

Olyphant, Eddy Creek and Marvine Collieries.—Ventilation, drainage and condition as to safety, good.

Legitts Creek Colliery.—Ventilation and condition as to safety, good. Drainage fair.

## DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Storrs Colliery.—Ventilation, drainage and condition as to safety, good.

## SCRANTON COAL COMPANY

Ontario Colliery.—Ventilation and drainage fair. Condition as to safety, good.

Johnson and Richmond No. 3 Collieries.—Ventilation and condition as to safety, good. Drainage fair.

## STERRICK CREEK COAL COMPANY, LIMITED

Sterrick Creek Colliery.—Ventilation, drainage and condition as to safety, good.

## LACKAWANNA COAL COMPANY, LIMITED

Lackawanna Colliery.—Ventilation, drainage and condition as to safety, good.

## MOUNT JESSUP COAL COMPANY, LIMITED

Mount Jessup Colliery.—Ventilation and condition as to safety, good. Drainage fair.

## MOOSIC MOUNTAIN COAL COMPANY

Marshwood Colliery.—Condition as to safety, good. Ventilation and drainage, fair.

## DOLPH COAL COMPANY, LIMITED

Dolph Colliery.—Condition as to safety, good. Ventilation and drainage, fair.

## IMPROVEMENTS

## DELAWARE AND HUDSON COMPANY (INSIDE)

## HUDSON COAL COMPANY (OUTSIDE)

Olyphant Colliery.—Grassy Island No. 1 Shaft.—Built new engine plane, with 12½ by 15 engine, on surface to handle pillar coal on East crop 14 Foot vein.

Started to sink Grassy No. 1 shaft, from New County vein to Dunmore No. 4 vein, about 300 feet, for air intake and additional outlet for men.



Grassy Island No. 2 Shaft.—Completed grading motor road about 3,000 feet toward No. 1 shaft in Dunmore vein.

Installed 4 air motors, 2 in Clark vein and 2 in Dunmore vein, for haulage.

Completed 12 inch reinforced concrete partition wall between intake and return compartments of No. 4 shaft, about 760 feet.

Bored 8 inch hole to flush ashes from boiler house directly into Rock and 14 Foot veins.

Installed new 22-36 by 25-16.5 by 12.5-7.5 by 42 inch stroke Laidlaw-Dunn-Gordon four-stage air compressor for use in motor haulage.

Miles Slope.—Replaced 150 feet of timbering with concrete and I beams, at mouth of main slope, under O. and W. Railroad.

Eddy Creek Colliery.—Placed 12 inch reinforced concrete partition wall between intake and return compartments of shaft, about 690 feet.

Completed rock plane for return of Clark vein.

Olyphant Shaft.—Completed rock plane 200 feet, Four Foot to No. 2 vein east of plane to fault.

Completed No. 12 rock slope, Rock vein to Clark vein 800 feet, cutting New County vein and 14 Foot vein.

Installed 16-25 by 25-16 by 24 inch two-stage Laidlaw-Dunn-Gordon air compressor for general use, pumping, haulage and rock-cutting.

Installed 24 by 24 first motion winding engine on surface in Smoke-town to operate No. 12 rock slope.

Birdeye.—Completed No. 7 rock tunnel, 200 feet from surface to bottom split 14 Foot vein.

Installed 5 by 4 Buffalo fan, and fan house, to ventilate bottom split of 14 Foot workings.

Drove rock tunnel 225 feet from Clark vein to New County vein off No. 3 slope and also rock return from same 75 feet.

Legitts Creek Colliery.—Rock plane, 12,300 feet long from Dunmore No. 3 to Dunmore No. 2 vein, for the purpose of opening Dunmore No. 2 vein.

Headings Nos. 42 and 39 to Rock vein graded to foot of No. 13 plane, for transportation.

Gangway from landing in Clark vein to pumping plant was bricked and I beams set. The same improvement was also begun in pipe-way from No. 2 pump.

#### DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Storrs Colliery.—Installed fan engine; hoist, motor, etc., at Storrs No. 3 shaft, Clark vein.

Remodeling Jeffrey locomotives. New waterway, West slope, No. 1 shaft. New plane in Fourteen Foot vein, No. 2 shaft.

Throughout the district there has been a decided improvement in the equipment. Fireproof barns have been erected at the various collieries.

#### MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in City Hall, Scranton, June 5 and 6. The Board of Examiners was composed

of the following persons: L. M. Evans, Mine Inspector, Scranton; Frank G. Wolfe, Engineer, Scranton; W. F. Malloy, Miner Carbondale; David Evans, Miner, Olyphant.

The following persons passed a satisfactory examination and were granted certificates:

### MINE FOREMEN

George Reese, Peckville; Joseph Mayers, Forest City; John Magner, Jessup; William Painter, Vandling; John Munley, Carbondale; David Lewis, William Howells, Olyphant; Patrick William Kane, Archbald; Reese Jones, Benjamin G. Isaacs, William Henry Fray, Daniel D. Evans, Scranton.

### ASSISTANT MINE FOREMEN

Michael Jennings, Jessup; John Hennemuth, Archbald; Stephen Bowen, Carbondale; Joseph Cleary, Wendell Davis, John D. Jones, Forest City; Martin S. McNamara, Patrick Reap, Arthur Tinsley, Thomas H. Thomas, Olyphant; William Bulgar, Dunmore; William Hill, Dunmore; Isaac Williams, James Degnall, Harry Jenkins, Thomas Charters, Thomas Thomas, Scranton; Fletcher Walker, Michael J. Scanlon, Peckville; Thomas Tapp, Dickson City; David Simons, Vandling.

## THIRD DISTRICT

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### LACKAWANNA COUNTY

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Scranton, Pa., February 13, 1913.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor of transmitting herewith my report as Inspector of Mines for the Third Anthracite District for the year ending December 31, 1912, as required by the Act of April 14, 1903.

Respectfully submitted,

S. J. Phillips, Inspector.

## SUMMARY OF STATISTICS

Number of collieries, .....	19
Number of mines, .....	33
Number of mines in operation, .....	32
Number of tons of coal shipped to market, .....	3,553,237
Number of tons used at mines for steam and heat, .....	375,062
Number of tons sold to local trade and used by employes, ..	141,656
Number of tons produced, .....	4,069,955
Number of tons produced by compressed air machines, ..	.....
Number of tons produced by electrical machines, .....	17,080
Number of persons employed inside of mines, .....	8,334
Number of persons employed outside, .....	2,067
Number of fatal accidents inside of mines, .....	35
Number of fatal accidents outside, .....	3
Number of non-fatal accidents inside of mines, .....	61
Number of non-fatal accidents outside, .....	9
Number of tons of coal produced per fatal accident inside, ..	116,284
Number of tons produced per fatal accident outside, ....	1,356,652
Number of tons produced per fatal accident inside and outside, .....	107,104
Number of persons employed per fatal accident inside, ..	238
Number of persons employed per fatal accident outside, ..	689
Number of persons employed per fatal accident inside and outside, .....	274
Number of persons employed per non-fatal accident inside, ..	137
Number of persons employed per non-fatal accident out- side, .....	230
Number of persons employed per non-fatal accident inside and outside, .....	149
Number of wives made widows, .....	23
Number of children made orphans, .....	73
Number of steam locomotives used inside of mines, .....	.....
Number of steam locomotives used outside, .....	15
Number of compressed air locomotives used inside, .....	.....
Number of compressed air locomotives used outside, .....	.....
Number of electric motors used inside, .....	41
Number of electric motors used outside, .....	.....
Number of fans in use, .....	26
Number of furnaces in use, .....	1
Number of gaseous mines in operation, .....	15
Number of non-gaseous mines in operation, .....	17
Number of new mines opened, .....	1
Number of old mines abandoned, .....	.....

TABLE A  
PRODUCTION OF COAL

Names of Operators	Tons
Delaware, Lackawanna and Western Railroad Company,	965,259
Pennsylvania Coal Company, .....	873,245
Scranton Coal Company, .....	657,983
Hudson Coal Company, .....	598,154
Price-Pancoast Coal Company, .....	584,981
Green Ridge Coal Company, .....	102,619
Nay Aug Coal Company, .....	98,361
The Spencer Coal Company, .....	56,624
Economy Light, Heat and Power Company, .....	41,853
Carney and Brown Coal Company, .....	31,606
Clearview Coal Company, .....	27,528
Bull's Head Coal Company, .....	27,371
No. 6 Coal Company, .....	4,371
Total, .....	4,069,955

Production by Counties

Lackawanna, .....	4,069,955
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TABLE B—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employees inside	Number of employees outside	Total number of employees	Number of employees inside per fatal accident	Number of employees outside per fatal accident	Number of employees inside per non-fatal accident	Number of employees outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Delaware, Lackawanna and Western Railroad Co., .....	12	1	13	23	2	25	80,433	41,968	2,450	547	2,997	204	547	107	274
Pennsylvania Coal Co., .....	8	1	9	8	3	11	109,156	109,156	1,498	363	1,861	187	363	187	121
Scranton Coal Co., .....	3	3	6	6	1	7	219,828	109,664	1,374	357	1,731	458	229	229	337
Hudson Coal Co., .....	4	4	8	9	2	11	149,539	66,462	1,048	223	1,271	282	116	116	112
Price-Pancoast Coal Co., .....	4	4	8	7	1	8	146,245	83,569	1,154	256	1,410	289	165	165	256
Green Ridge Coal Co., .....	4	4	8	3	.....	3	34,206	.....	192	88	280	64	.....	.....	.....
Nay Aug Coal Co., .....	.....	.....	.....	.....	.....	.....	.....	.....	189	51	240	.....	.....	.....	.....
The Spencer Coal Co., .....	.....	.....	.....	3	.....	3	32,787	.....	51	85	285	.....	.....	63	.....
Carney and Brown Coal Co., .....	.....	.....	.....	1	.....	1	56,624	.....	200	34	99	.....	34	200	.....
Gleadow Coal Co., .....	.....	1	1	.....	.....	.....	.....	.....	65	34	99	.....	.....	.....	.....
Bull's Head Coal Co., .....	1	.....	1	4	.....	4	27,528	.....	72	18	90	72	.....	20	.....
Miscellaneous Companies, .....	.....	.....	.....	.....	.....	.....	6,843	.....	79	26	105	.....	.....	.....	.....
Totals and averages for district, ...	25	3	38	61	9	70	116,284	66,721	8,334	2,067	10,401	238	689	137	230

TABLE C.—Classification of Fatal Accidents Inside and Outside of Mines

	Months												Percentages
	Totals	December	November	October	September	August	July	June	May	April	March	February	
Causes of Accidents Inside													
Falls of roof, .....	19	2	1	1	1	2	5	2	1	1	2	2	51.28
Mine cars, .....	4	1					1					2	11.43
Explosions of gas, ....	1										1		2.86
Explosions of powder and dynamite, .....	1						1						2.86
Blasts, premature and otherwise, .....	6					1	1		1		2	1	17.14
Falling into shafts, ..	3	1			1							1	8.57
Struck by timber, ....	1											1	2.86
Totals, .....	35	3	2	1	2	3	8	2	2	3	5	6	100.00
Causes of Accidents Outside													
Cars, .....	2								1			1	66.67
Scalded by steam, .....	1						1						33.33
Totals, .....	3						1		1			1	100.00
Grand totals inside and outside, .....	38	3	2	1	2	3	8	2	3	3	5	6	

TABLE D.—Classification of Non-Fatal Accidents Inside and Outside of Mines

	Months												Percentages
	Totals	December	November	October	September	August	July	June	May	April	March	February	
Causes of Accidents Inside													
Falls of coal, .....	5	1	1		2		1						8.19
Falls of slate, .....	1						1						1.64
Falls of roof, .....	18	4	3		2		3	5				1	29.51
Mine cars, .....	16		1	1		1	4	3	1		2		26.23
Explosions of gas, ....	3		2				1						4.92
Explosions of powder and dynamite, .....	4			3						1			6.56
Blasts, premature and otherwise, .....	6	3	1						1			1	9.83
Falling into shafts, ..	1	1											1.64
Mules, .....	3						3						4.92
Rush of coal, .....	1	1											1.64
By falling, .....	1						1						1.64
By cage, .....	2		1								1		3.28
Totals, .....	61	10	9	4	6	1	13	9	2	2	3	2	100.00
Causes of Accidents Outside													
Cars, .....	5			1				1			2		55.56
Machinery, .....	1										1		11.11
Explosion of dynamite	1											1	11.11
By falling, .....	1										1		11.11
Struck by a hatchet, ..	1						1						11.11
Totals, .....	9			1			1	1			2	2	100.00
Grand totals inside and outside, .....	70	10	9	5	6	1	14	10	2	4	5	4	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Miners, .....		1	3		2	2	5	2	1	1		1	18
Miners' laborers, .....	1	1	1				1					1	6
Drivers and runners, .....		1					1				1		3
Company men, .....											1		1
Motormen, .....		1											1
Machine runners, .....		1											1
Bratticemen, .....			1										1
Timbermen, .....							1						1
Rockmen, .....								1					1
Headmen, .....									1				1
Muckers, .....												1	1
Totals, .....	1	6	5		2	2	8	3	2	1	2	3	35
Outside													
Engineers and firemen, .....						1							1
Miners, .....	1												1
Drivers, .....					1								1
Totals, .....	1				1	1							3
Grand totals inside and outside, .....	2	6	5		3	3	8	3	2	1	2	3	38

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Miners, .....	1	1	1	.....	.....	4	6	.....	2	2	3	5	26
Miners' laborers, .....	1	1	.....	.....	1	1	1	.....	1	1	3	3	15
Drivers and runners, .....	.....	1	1	.....	1	1	5	1	1	1	.....	.....	12
Doorboys and helpers, .....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
Bratticemen, .....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	.....	2
Company men, .....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	.....	2
Headmen, .....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1
Barnbosses, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Muckers, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1
Totals, .....	2	3	2	.....	2	9	13	1	6	4	5	10	61
Outside													
Blacksmiths and carpenters, .....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
Laborers, .....	2	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	4
Oilers, .....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Sweepers, .....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Headmen, .....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Timbermen, .....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1
Totals, .....	2	2	2	.....	.....	1	1	.....	.....	1	.....	.....	9
Grand totals inside and outside, .....	4	5	4	.....	2	10	14	1	6	5	9	10	70

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
American, .....	...	...	1	...	1	...	2	...	...	...	...	1	5
English, .....	...	...	...	...	...	1	...	...	...	...	...	...	1
Scotch, .....	...	1	...	...	...	...	...	...	...	...	...	...	1
Irish, .....	...	1	...	...	...	...	...	...	...	...	...	...	1
German, .....	...	...	1	...	...	...	...	...	...	...	1	...	2
Polish, .....	1	2	...	...	...	1	3	1	1	...	...	...	9
Hungarian, .....	...	...	...	...	...	...	...	...	...	1	...	...	1
Italian, .....	1	...	...	...	1	...	...	1	...	...	...	...	3
Slavonian, .....	...	2	2	...	...	...	2	...	1	...	...	1	8
Lithuanian, .....	...	1	1	...	1	1	...	1	...	...	1	1	6
Greek, .....	...	...	...	...	...	...	1	...	...	...	...	...	1
Totals, .....	2	6	5	...	3	3	8	3	2	1	2	3	33

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
American, .....	...	1	1	...	...	1	6	1	1	...	2	1	14
English, .....	...	...	...	...	...	1	...	...	...	...	1	...	4
Welsh, .....	...	...	...	...	...	3	...	...	1	1	...	...	7
Scotch, .....	...	...	...	...	...	...	1	...	...	...	...	...	1
Irish, .....	1	...	...	...	...	...	...	...	...	...	1	...	2
German, .....	...	...	...	...	...	...	...	...	...	...	1	...	1
Polish, .....	1	...	3	...	1	3	...	...	1	...	...	1	12
Hungarian, .....	...	...	...	...	...	1	1	...	...	...	...	1	3
Italian, .....	2	2	...	...	...	...	2	...	...	...	3	...	11
Slavonian, .....	...	...	...	...	...	...	...	...	...	...	...	3	3
Lithuanian, .....	...	1	...	...	1	1	...	...	1	1	...	...	6
Russian, .....	...	1	...	...	...	...	...	...	2	1	1	2	7
Totals, .....	4	5	4	...	2	10	14	1	6	5	9	10	70

TABLE I - Operators and mines, kind of openings, type and size of fans, size of furnaces, volume of air produced by fan or furnace per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	Kind of opening	Gaseous or non-gaseous	Method of ventilation	Diameter of fan in feet and inches	Width of blades in feet and inches	Depth of blades in feet and inches	Number of revolutions per minute	Water gauge developed--in inches	Name of fan	Power used	Area of furnace bats in square feet	Number of splits of air currents	Number of cubic feet of air per minute entering the mine at inlet	Total number of cubic feet of air per minute circulating in all the splits	Number of cubic feet of air per minute passing out at outlet	Number of persons employed inside
Delaware, Lackawanna and Western Colliery Co.																
Diamond No. 2	Shaft.....	Gaseous..	Fan, ....	16	4	5	92	1.5	Gulbal, ..			6	121,600	106,400	153,800	320
Diamond Tripp	Shaft.....	Gaseous..	Fan, ....	14	4	4	135	1.9	Gulbal, ..			6	60,895	53,350	78,217	271
Diamond Tripp	Slope.....	Non-gas..	Fan, ....	14	4	4	125	1.9	Gulbal, ..			3	84,000	36,770	85,000	62
Diamond	Drift.....	Non-gas..	Fan, ....	14	4	4	92	.9	Gulbal, ..			3	42,250	38,710	43,900	214
Brishin Colliery																
Brishin	Shaft.....	Gaseous..	Fan, ....	14	3.6	3.6	138	.6	D. L. and W.	Steam.....		10	193,680	177,000	213,000	680
Caruga Colliery																
Caruga	Shaft.....	Gaseous..	Fan, ....	18	6	5.6	80	2.5	Jeffrey, ..			10	183,060	161,400	198,180	386
Manville Colliery																
Manville	Shaft.....	Gaseous..	Fan, ....	20	5	5	81	1.1	Gulbal, ..			10	191,740	162,440	226,908	391
Pennsylvania Coal Co.																
Pennsylvania No. 1 Colliery																
No. 2	Drift.....	Non-gas..	Fan, ....	17.8	5	5.3	66	.9		Steam.....		8	109,200	91,000	112,700	354
No. 1	Shaft.....	Gaseous..		17.8	5	5.3	70	.9		Steam.....		7	133,690	133,690	150,285	387
Gusty Grove	Shaft.....	Non-gas..	2 Fans, ..	20	6.6	5.5	64	1.2		Steam.....		3	30,300	26,450	30,750	68
Clark	Slope.....	Non-gas..	Fan, ....	17.8	5	5.3	24	.6	Gulbal, ..			1	24,600	24,100	25,000	65
New County	Slope.....	Non-gas..	Fan, ....	7	1.4	2.10	244	.5		Electricity..		1	26,200	26,000	26,500	20
Pennsylvania No. 5 Colliery																
No. 5	Shaft.....	Gaseous..	2 Fans, ..	20	6.6	5.5	75	1.5		Steam.....		9	115,500	74,000	137,750	369
				17.8	5	5.3	60	.4		Electricity..						



Locality	Shaft	Gasous	Fan	17.6	5	6	102	1.2	Guibal	Steam	13	180,000	175,000	205,200	803
Scranton Coal Co. Pine Creek Colliery: Pine Brook	Shaft	Gasous	Fan	17.6	5	6	102	1.2			..	130,000	175,000	205,200	803
Mount Pleasant Colliery: Mount Pleasant (main)	Shaft	Gasous	Fan	20	5.6	6.9	60	7			..	103,000	100,000	170,000	246
Mount Pleasant (surface)	Shaft	Non-gas	Fan	12	3.2	3.5	80	.6			..	85,000	80,000	130,000	91
West Ridge Colliery: West Ridge	Shaft	Gasous	Fan	20	5	5	85	1.8			..	84,000	74,000	89,900	234
Hudson Coal Co. Von Storeh Colliery: Von Storeh	Slope	Gasous	Fan	22	5.6	7	80	2.2			..	125,250	100,360	129,550	206
Von Storeh, Parker	Shaft	Gasous	Fan	12	3	4	85	2.2			..	63,670	58,280	74,370	212
Dickson	Shaft	Gasous	2 Fans	{ 20 20 }	5 5	7 7	75 85	{ 1.6 1.9 }			..	220,160	197,200	300,900	527
Price-Pancoast Coal Co. Pancoast Colliery: Pancoast	Shaft	Gasous	3 Fans	{ 35 20 20 }	11 5.10 5.10	9.6 5 5	48 90 70	{ 1.6 1.2 2.5 }			..	362,263	340,885	381,452	1082
Green Ridge Coal Co. Green Ridge Colliery: Green Ridge	Slope	Gasous	Fan	16	5	4.6	48	2.5			..	92,655	74,780	110,765	775
Nay Aug Coal Co. Nay Aug Colliery: No. 1	Slope	Non-gas	Natural	.....	.....	.....	.....	.....			..	27,700	27,100	27,900	74
Nay Aug	Drift	Non-gas	Natural	.....	.....	.....	.....	.....			..	24,600	24,200	24,700	72
No. 2	Drift	Non-gas	Natural	.....	.....	.....	.....	.....			..	20,400	19,200	20,000	43
The Spencer Coal Co. Spencer Colliery: No. 1	Shaft	Non-gas	Natural	.....	.....	.....	.....	.....			..	67,400	42,400	30,500	100
No. 2	Shaft	Non-gas	Natural	.....	.....	.....	.....	.....			..	31,700	28,300	22,600	100
Carney and Brown Coal Co. Carney and Brown Colliery: Carney and Brown	Slope	Non-gas	Furnace	.....	.....	.....	.....	.....			32	13,734	13,886	13,886	65
Clearview Coal Co. Clearview Colliery: Clearview	Shaft	Non-gas	Natural	.....	.....	.....	.....	.....			..	14,250	12,700	10,555	69
Clearview	Drift	Non-gas	Natural	.....	.....	.....	.....	.....			..	4,200	3,050	1,950	3

It is difficult to measure the air owing to the many connections in the old workings, together with cave holes.

TABLE I—Continued

Number of persons employed inside	78	13
Number of cubic feet of air per minute passing out at outlet	36,000	6,000
Total number of cubic feet of air per minute circulating in all the splits	32,000	5,000
Number of cubic feet of air per minute entering the mine at inlet	32,000	5,000
Number of splits of air currents	3	1
Area of furnace bars in square feet	..	..
Power used	.....	.....
Name of fan	.....	.....
Water gauge developed—in inches	.....	.....
Number of revolutions per minute	.....	.....
Depth of blades in feet and inches	.....	.....
Width of blades in feet and inches	.....	.....
Diameter of fan in feet and inches	.....	.....
Method of ventilation	Natural, ..	Natural, ..
Gaseous or non-gaseous	Non-gas, ..	Non-gas, ..
Kind of opening	Slope,.....	Slope,.....
Names of Operators and Mines	Bull's Head Coal Co. Bull's Head Colliery: Bull's Head, .. No. 6 Coal Co. No. 6 Colliery: No. 6, ..	

\* New mine.

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	Name of General Superintendent	Post Office	Name of Superintendent	Post Office	Railroad to Mine
Delaware, Lackawanna and Western Railroad Co.						
Diamond, .....	} Lackawanna.	C. E. Tobey, .....	Scranton, .....	{ Walter Reese, .....	Scranton, .....	D. L. and W.
Brisban, .....						
Manville, .....						
Cayuga Washery, .....						
Diamond Washery, .....						
Pennsylvania Coal Co.	} Lackawanna.	W. W. Inglis, .....	Dunmore, .....	Jesse Palmer, .....	Dunmore, .....	Erie
Pennsylvania Nos. 1 and 5, Underwood,† .....						
Scranton Coal Co.	} Lackawanna.	W. L. Allen, .....	Peckville, .....	{ Daniel Young, Inside John F. Cummings, Outside.	Scranton, .....	O. and W.
Pine Brook, .....						
Mount Pleasant, .....						
West Ridge, .....	} Lackawanna.	C. C. Rose, .....	Scranton, .....	E. R. Pettebone, ..	Scranton, .....	D. and H.
Hudson Coal Co.						
Von Storch, .....						
Von Storch Washery, .....	} Lackawanna.	John R. Bryden, .....	Scranton, .....	Joseph V. Birtley, ..	Throop, .....	D. L. and W., O. and W., D. and H.
Price-Pancoast Coal Co.						
Pancoast Washery, .....						
Green Ridge Coal Co.	} Lackawanna.	W. L. Connell, .....	Scranton, .....			Erie and D. and H.
Green Ridge, .....						
North End Coal Co.	} Lackawanna.	W. L. Connell, .....	Scranton, .....	Arthur Widowfield, ..	Scranton, .....	O. and W.
North End,* .....						
Nay Aug Coal Co.	} Lackawanna.	E. H. Leaning, .....	Scranton, .....	J. A. Hines, .....	Scranton, .....	Erie
Nay Aug, .....						
The Spencer Coal Co.	} Lackawanna.	F. W. Campbell, .....	Dunmore, .....			Erie
Spencer, .....						
Spencer Washery, .....						

\*Idle.  
†New mine.

TABLE 1--Continued

Names of Operators and Collieries	County	Name of General Superintendent	Post Office	Name of Superintendent	Post Office	Railroad to Mine
Economy Light, Heat and Power Co.	Lackawanna, ..	D. C. Shaw, .....	Scranton, .....	R. Van O'Linda, ....	Scranton, .....	D. and H.
Economy Washery, .....	Lackawanna, ..	John Carney, .....	Dunmore, .....	John J. Brown, ....	Dunmore, .....	D. L. and W.
Carney and Brown Coal Co.	Lackawanna, ..	Frank P. Christian, ..	Scranton, .....	Hugh A. Dawson, ..	Scranton, .....	O. and W.
Clearview Coal Co.	Lackawanna, ..	David Spruks, .....	Scranton, .....	Jay Law, .....	Scranton, .....	O. and W.
Bull's Head Coal Co.	Lackawanna, ..	W. Y. Moffatt, .....	Dunmore, .....	.....	.....	None
Bull's Head, .....						
No. 6 Coal Co.						
No. 6,† .....						

†New mine.

TABLE 2.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured, quantity of powder, dynamite and permissible explosives used, etc.

Names of Operators and Collieries	County	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employees	Total production of coal in tons	Number of days worked	Number of employees	Number of fatal accidents	Number of non-fatal accidents	Explosives			Number of horses and mules
										Number of pounds of powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used	
Delaware, Lackawanna and Western Railroad Co.													
Diamond,	Lackawanna,	400,673	13,975	.....	419,648	226	1,194	9	5	550,750	33,516	.....	148
Brisbin,		220,406	19,833	5,107	245,366	251	779	3	7	314,450	19,887	.....	52
Cayuga,		138,301	17,857	7,651	163,509	237	488	1	4	143,625	77,696	.....	36
Mauville,*		48,707	14,962	761	64,480	91	460	.....	8	147,950	8,528	.....	51
Diamond Washery,†		808,087	71,347	13,519	892,953	.....	2,921	13	24	1,156,775	144,627	.....	287
Cayuga Washery,		72,306	.....	.....	72,306	988	27	.....	1	.....	.....	.....	.....
Totals,		880,393	71,347	13,519	965,359	.....	2,997	13	25	1,156,775	144,627	.....	287
Pennsylvania Coal Co.													
Pennsylvania No. 1,	Lackawanna,	546,453	32,956	1,942	581,351	256	1,227	5	4	643,750	2,625	13,635	96
Pennsylvania No. 5,		268,750	3,482	14,662	291,894	246	634	1	4	257,400	.....	4,667	56
Underwood,‡		.....	.....	.....	.....	.....	.....	3	3	.....	.....	.....	.....
Totals,		815,203	41,438	16,604	873,245	.....	1,861	9	11	901,150	2,625	13,322	152

\*Worked every alternate month by Hudson Coal Company.

†Included with Diamond Colliery.

‡New mine.







TABLE 2.—Part 2

Names of Operators	County	Number of Rollers				Locomotives			Total horse power	Number of steam engines of all classes	Total horse power	Number of pumps delivering water to surface	Capacity in gallons per minute	Quantity delivered to surface per minute—gallons	Number of electric dynamos	Number of air compressors
		Cylindrical	Horse power	Tubular	Horse power	Total horse power	Steam	Air	Electric							
Delaware, Lackawanna and Western Railroad Co.,		9	1,922	15	4,550	6,472	5	.....	13	74	5,812	21	13,929	9,814	1	.....
Pennsylvania Coal Co.,		.....	3,300	22	3,300	3,300	5	.....	11	43	3,180	1	960	600	6	1
Seranton Coal Co.,		12	180	17	2,135	2,615	.....	.....	8	35	3,375	12	8,517	5,400	3	4
Hudson Coal Co.,		.....	.....	13	3,000	3,690	1	.....	.....	43	3,107	.....	.....	.....	1	3
Price-Potomac Coal Co.,		.....	.....	11	1,835	1,835	.....	.....	.....	29	1,908	2	2,000	2,000	2	.....
Green, Ridge Coal Co.,		.....	.....	9	1,125	1,125	.....	.....	3	8	594	.....	.....	.....	.....	.....
Nay Aug Coal Co.,		.....	.....	3	240	240	.....	.....	.....	4	130	.....	.....	.....	.....	.....
The Superior Coal Co.,		.....	.....	.....	109	555	.....	.....	3	13	555	.....	.....	.....	2	.....
Carnegie and Brown Coal Co.,		11	175	3	390	340	4	.....	.....	4	115	.....	.....	.....	.....	.....
Clearview Coal Co.,		.....	.....	.....	.....	.....	.....	.....	1	.....	48	1	60	50	2	.....
Bull's Head Coal Co.,		3	52	.....	.....	52	.....	.....	.....	3	105	.....	.....	.....	.....	.....
Totals,		35	2,329	97	17,415	19,774	15	.....	41	256	18,929	37	25,406	17,861	17	10

Lackawanna.







TABLE 4.—Fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan.	3 Salvatore Mira, .....	Italian, .....	Miner, .....	42	M.	1	5	Pennsylvania No. 1, ....		Fatally injured by falling under cars. He was riding in cars on his way home from No. 2 shaft to No. 1 track when he died the next day. Outside.
	John Kukaruk, .....	Polish, .....	Laborer, .....	22	S.	..	..	Diamond, ...		Instantly killed by falling down shaft. He was working the Kender Vehm. On the way home he must have got confused and opened the self-closing gate at the foot, and fell down shaft.
Feb.	6 Patrick O'Boyle, ....	Irish, .....	Mach. runner	45	M.	1	..	Underwood, ..		Killed at foot of shaft, by being struck by piece of "Biller" block, which was broken by cross head. It became stuck in shaft while bucket was descending, but later released itself and fell. Shaft was being run by hand.
	Mike Pipin, .....	Slavonian, ..	Laborer, ....	22	S.	..	..	Pennsylvania No. 1, ....		Killed by fall of roof at face of chamber. The miner left chamber in unsafe condition.
13	Frank Stancavitch, ..	Polish, .....	Driver .....	19	S.	..	..	Pine Brook, ...		Killed by miner cars on main road. His lamp fell off his cap and while picking lamp up he was caught by the cars.
15	Frederick Green, .....	Scotch, .....	Motorman, ....	21	S.	..	..	Von Storch, ..	Lackawanna	Killed by mine cars on main road. He fell off motor while teaching his brakeman to run it.
16	Peter Murrick, .....	Slavonian, ..	Laborer, .....	22	S.	..	..	Pennsylvania No. 1, ....		Killed by being struck by piece of roof that fell off rib in pillar place. The miner had told the laborer not to work there.
29	Anthony Horosko, ....	Polish, .....	Miner, .....	44	M.	1	3	Pancoast, ...		Fatally injured by premature blast at face. Died March 9.
March 7	Mike Yuchak, .....	Slavonian, ..	Laborer, ....	22	S.	..	..	Green Ridge, ..		Fatally injured by fall of roof in pillar place. Died a few hours later.
	Thomas Zatawesky, ..	Lithuanian, ..	Miner, .....	44	M.	1	5	Pancoast, ...		Fatally killed by delayed blast at face. He thought the squib had missed fire and returned too soon.
15	William R. Davis, ...	American, ...	Bratticeman,	33	M.	1	5	Diamond, ...		Killed by setting off a pocket of gas at face of abandoned chamber.
26	Otto Regl, .....	German, ....	Miner, .....	38	M.	1	2	Pine Brook, ..		Instantly killed by premature blast at face.
27	Theodore Ruba, .....	Slavonian, ..	Miner, .....	39	M.	1	6	Pancoast, ...		Instantly killed by fall of roof 25 feet from face.
May 23	Martin Jacobs, .....	Lithuanian, ..	Miner, .....	51	M.	1	3	Von Storch, ..		Fatally injured by premature blast at face. He forced tight cartridge into hole with a steel drill. Died May 25.

TABLE 4—Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
May 23	Casper Baroni, .....	Italian, .....	Miner, .....	35	M.	1	2	Pancoast, ...		Instantly killed by fall of roof at face. He was helping his laborer to load his car, with a view of making a place for a prop, when piece of roof fell.
27	Timothy Fitzpatrick, .....	American, ..	Driver, .....	17	S.	..	..	Carney and Brown, ...		Fatally injured while dumping car on dump. The top of car came back and struck him on the chest with considerable force. Died June 5. Outside.
June 13	Dawson Grange, .....	English, ....	Fireman, ..	40	M.	1	..	Brisbin, .....		Fatally injured by being scalded while closing slide on boiler. Hot coals were escaping through opening on which the slide was. Died June 20. Outside.
22	Thomas Satola, .....	Lithuanian, ..	Miner, .....	37	M.	1	4	Diamond, ...		Instantly killed by fall of roof at face. He was replacing discharged timber. Died July 1.
23	Paul Eizinski, .....	Polish, ....	Miner, .....	32	M.	1	2	Von Storch, ..		Instantly killed by fall of roof at face.
3	Alex Shinko, .....	Polish, ....	Miner, .....	40	M.	1	6	Pennsylvania No. 5, .....	Lackawanna	Instantly killed by fall of roof at face.
6	George Armonovidge, .....	Polish, ....	Laborer, ....	28	M.	1	5	Diamond, ...		Instantly killed by fall of roof at face.
8	John Swarm, .....	Greek, .....	Miner, .....	35	M.	1	2	Green Ridge, ..		Fatally injured by explosion of powder 150 feet from face. He was testing blasting barrel by putting a squib in it. He lighted the squib, which blew through and ignited the powder that he had just taken out of h.s. box preparatory to firing a blast. Died July 22.
15	Charles Mandage, ...	Slavonian, ..	Miner, .....	35	M.	1	2	Diamond, ...		Fatally injured by premature blast while escaping to a place of safety. Died July 21.
20	Charles Alashalavis, ..	Polish, ....	Miner, .....	30	S.	..	..	Diamond, ...		Fatally injured by falling and being squeezed by mine cars on main road. Died a few hours later.
26	John Ketrick, .....	American, ..	Driver, .....	54	S.	..	..	Von Storch, ..		Fatally injured by fall of roof on main road. Died August 6.
28	Martin Sheridan, ....	American, ..	Timberman, ..	38	S.	..	..	Cayuga, .....		Instantly killed by fall of roof on main road while taking down top coal.
31	Mike Gaboney, .....	Slavonian, ..	Miner, .....	47	M.	1	3	Diamond, ...		Instantly killed by fall of roof on main road.
Aug. 12	Joe Armalena, .....	Italian, .....	Rockman, ..	27	S.	..	..	Pennsylvania No. 1, .....		Instantly killed by fall of roof on main road.

Aug. 17	John Kannis, .....	Polish, .....	Miner, .....	32	S.	..	..	Brislin, .....	Instantly killed by fall of roof at face while making room for prop.
27	William Stravinski, .	Lithuanian, .	Miner, .....	54	M.	1	..	Diamond, ...	Instantly killed by premature blast at face.
Sept. 6	John Soliman, .....	Polish, .....	Miner, .....	32	S.	..	..	Pennsylvania No. 1, ...	Fatally injured by fall of roof at face. Died September 8.
20	Mike Gidish, .....	Slavonian, .	Headman, ..	48	M.	1	5	Underwood, ..	Instantly killed by falling down shaft.
Oct. 13	John Kelleman, .....	Hungarian, .	Miner, .....	38	M.	1	6	Diamond, ...	Killed by fall of roof 30 feet from face of chamber. He was descending car door when saddle-shaped piece of roof fell.
Nov. 3	Jacob Racht, .....	German, ....	Company man	32	M.	1	3	Clearview, ..	Fatally injured by fall of roof at face of chamber. Died a few hours later.
21	Anthony Miller, .....	Lithuanian, .	Driver, .....	20	S.	..	..	West Ridge, .	Fatally injured by mine cars on main road. Died November 23.
Dec. 5	William Davis, .....	American, ..	Mucker, ....	23	S.	..	..	Underwood, .	Fatally injured by falling down shaft that was being sunk. Died December 6.
9	Adam Stankvitch, ..	Lithuanian, .	Miner, .....	26	M.	1	1	Brislin, .....	Instantly killed by fall of roof at face.
10	Mike Crooper, .....	Slavonian, .	Laboret, ....	49	M.	1	3	Green Ridge, }	Fatally injured by fall of roof at face. Died December 12.

Note.—January 20, Charles Mautebie, who was injured at the Pancoast Colliery, October 28, 1911, died from his injuries.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 9	William Walsh, ....	Irish, .....	Laborer, .....	44	M.	Underwood, ..		Face cut while withdrawing a charge of dynamite from a "misfired" hole; the dynamite exploded. He worked in a quarry securing material for concrete for the colliery. Outside.
10	Cortik Kuklo, .....	Polish, .....	Laborer, .....	40	M.	Pennsylvania No. 1, ..		Left leg fractured by fall of roof in face of chamber. Outside.
18	Fuck Jose, .....	Italian, .....	Laborer, .....	39	M.	Underwood, ..		Leg fractured while helping to dump a rock car. The body of the car came back and caught his leg. Outside.
22	Tony Morocco, .....	Italian, .....	Miner, .....	28	S.	Manville, ...		Head lacerated by premature blast at face. He unraveled squib too close to powder and it exploded before he reached a place of safety.
Feb. 9	Frank Dearchangel, ..	Italian, .....	Sweeper, .....	18	S.	Pennsylvania No. 1, ..		Left ear taken off and both legs fractured by falling in going from one floor to another in breaker. Outside.
10	John Vochuk, .....	Russian, ....	Headman, .....	32	S.	Pancoast, ...	Lackawanna	Leg punctured by being caught in one of the books that returns the empty cars to the cage, while cleaning up before starting time. Outside.
15	Sam Cawley, .....	Italian, .....	Laborer, .....	51	M.	Nay Aug, ..		Rib fractured by car. He stood in the way of the loaded car while pulling blocks that the car might run out of chamber.
16	Joseph Zancosky, ..	Lithuanian, ..	Miner, .....	28	M.	Pennsylvania No. 5, .....		Leg fractured at knee. He was descending shaft on cage when it struck the fans at Clarks vein.
23	Raymond Pickering, ..	American, ..	Driver, .....	34	M.	Bull's Head, ..		Stomach injured by being struck by car. He was pulling loaded car out of chamber when a piece of coal on top of car stuck in roof. When he tried to remove the piece the mules started while he was in way of car.
March 11	Polick Eranitsky, ....	Polish, .....	Driver, .....	16	S.	Pennsylvania No. 1, ..		Leg fractured above knee by mine cars on main road.
13	Mike Grisanski, .....	Polish, .....	Miner, .....	24	S.	Brisbin, .....		Face and hands burned by powder about 100 feet from face. He was measuring powder with lamp on his head.
	William Barrett, .....	American, ..	Oiler, .....	16	S.	Von Storch, ..		Legs fractured and arm lacerated by mine cars. Outside.

March 23	Stephen Yatsco, .....	Polish, .....	Laborer, .....	30	S.	Mt. Pleasant,	Finger of left hand cut off by spragging a car. Outside.
May 23	John Cowart, .....	Lithuanian,	Laborer, .....	30	.....	Von Storch, ..	Face and arms burned and bruised by premature blast at face.
	Harry Lipcavidge, ..	Polish, .....	Driver, .....	19	S.	Pine Brook, ..	Thigh fractured by being caught by car while riding on a car bumper going out of a chamber. He was in the act of crossing the stretcher.
June 4	Joseph Kawsawski, ..	Lithuanian,	Miner, .....	39	M.	Cayuga, ....	Compound fracture of arm and cut over eye by fall of roof at face. He was taking down a bad piece of roof over which there was another bad piece of which he had no knowledge.
5	Thomas Murphy, ....	American, ..	Headman, .....	20	S.	Nay Aug, ..	Hip dislocated by being thrown off car bumper on which he was riding.
11	David L. Jones, .....	Welsh, .....	Timberman, .....	65	M.	Von Storch, ..	Knee injured by being caught between cars. While he was uncoupling mine cars, the yard engine bumped the cars. Outside.
13	Mike Blislock, .....	Polish, .....	Runner, .....	18	S.	Pine Brook, ..	Leg fractured and dislocated by mine cars.
26	{ John Gamesh, .....	English, ..	Miner, .....	47	M.	Brisbin, ....	Back injured. These men were caught by fall of roof in a cut-off on main road.
27	{ David Jenkins, .....	Welsh, .....	Laborer, .....	46	M.	Brisbin, ....	Leg fractured.
	Joe Bartholdi, .....	Hungarian,	Miner, .....	21	S.	Brisbin, ....	Leg lacerated by falling while withdrawing sheet-iron from pitching places.
	James Gripp, .....	Polish, .....	Miner, .....	35	M.	Manville, ..	Scalp wounded and back contused by fall of roof at face.
28	William Zazefsky, ..	Polish, .....	Laborer, .....	23	S.	Pancoast, ..	Back and shoulder contused by fall of roof at face.
29	John Evans, .....	Welsh, .....	Bratticeman, ..	45	M.	Brisbin, ....	Leg fractured by mine cars on main road.
July 1	John R. Kelly, .....	American, ..	Driver, .....	17	S.	Diamond, ..	Leg fractured by being caught between mine cars on main road.
3	Joe Marche, .....	Italian, .....	Laborer, .....	24	S.	Pennsylvania No. 5, .....	Skull lacerated and back contused by fall of roof at face.
12	Jacob Schism, .....	Polish, .....	Miner, .....	44	M.	Pancoast, ..	Bruised by loaded cars on main road.
17	Ignatz Wyodylicwicz	Polish, .....	Miner, .....	38	M.	Pancoast, ..	Head, face and chest lacerated by premature blast at face. He lighted gas when firing shot.
	Joe Canstanizo, .....	Italian, .....	Miner, .....	25	M.	Pennsylvania No. 5, .....	Leg fractured while barring out piece of coal at face.
18	Sam Elash, .....	Hungarian,	Miner, .....	33	S.	Pine Brook, ..	Patella fractured by fall of roof at face.
21	Patrick Hickey, .....	American, ..	Runner, .....	19	S.	Cayuga, ....	Hip dislocated by mine cars in chamber.
22	Geo. Grifthus, .....	American, ..	Driver, .....	21	S.	Mt. Pleasant	Jaw-bone broken by being kicked by a mule on main road.
	Thomas Walsh, .....	American, ..	Runner, .....	17	S.	Von Storch, ..	Foot crushed while replacing detailed car on main road.
25	Willis N. Carpenter, .	American, ..	Carpenter, .....	56	M.	Diamond, ....	Side of head cut by being struck by falling hatchet. Outside.
26	Thomas Evans, .....	Welsh, .....	Miner, .....	55	S.	Mt. Pleasant	Right arm severed above elbow by fall of roof on main road. He was driving crosstie to a new section of the mine.
27	Thomas Benson, ....	Scotch, .....	Company man, ..	29	S.	Pancoast, ..	Two ribs fractured by being kicked by a mule on main road.
29	John Woodbridge, ..	American, ..	Runner, .....	20	S.	Diamond, ....	Cut over eye by being kicked by a mule on main road.
30	John H. Thomas, ....	Welsh, .....	Miner, .....	38	M.	Diamond, ....	Back sprained by a piece of slate falling on him while mining out a hole at face.

Lackawanna



TABLE 5—Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Aug. 15	John Thompson, ....	American, ..	Driver, .....	19	S.	Manville, ...	Lackawanna	Leg bruised by being caught between ground and car bumper. He was riding on the rear end of a loaded car on main road when it came in contact with the head block, which derailed the car. Bones in lower right leg fractured. As a trip of loaded cars approached his door on main road, he failed to get the door open and the trip struck the door and the door struck him.
Sept. 7	George W. Reeser, ..	American, ..	Doortender, .....	54	S.	Von Storch, ..		Foot bruised by falling coal at face.
11	Tuffrey Carleskie, ..	Lithuanian, ..	Laborer, .....	26	S.	Bull's Head, ..		Humerus fractured while barring down piece of top coal at face.
17	John A. Davis, .....	Welsh, .....	Miner, .....	49	S.	Brislin, ....		Clavicle fractured while riding on car bumper on main road.
18	Charles Smith, .....	Russian, ....	Driver, .....	21	S.	Cayuga, ....		Head lacerated by fall of roof at face.
21	Charles Rezan, .....	Polish, .....	Laborer, .....	30	S.	Manville, ...		Ribs fractured by fall of roof at face.
28	Charles Shultzeck, ..	Russian, ..	Miner, .....	33	M.	Nay Aug., ...		Hands, arms and face slightly burned by explosion of powder at face of chamber.
Oct. 9	Joseph Emery, .....	Lithuanian, ..	Miner, .....	38	M.	Von Storch, ..		Arm fractured by mine cars on main road.
14	Howard Williams, ...	Welsh, .....	Driver, .....	28	S.	Bull's Head, ..		Jaw-bone fractured and body bruised. Dynamite exploded while Porter was tamping it in the hole.
24	Richard Porter, ....	English, ...	Miner, .....	46	M.	Von Storch, ..		Body bruised.
24	Arthur Porter, ....	English, ...	Laborer, .....	22	S.	Von Storch, ..		Hand bruised by mine car. Outside.
29	John Hotello, .....	Russian, ...	Laborer, .....	25	S.	Pennond, ....		Back bruised and rib fractured by being thrown off the cage, which was caught in the shaft while Meyer was descending.
Nov. 4	Jacob Meyer, .....	German, ....	Harn Doss, .....	28	M.	Brislin, ....		
7	Gusippi Liptella, ....	Italian, .....	Laborer, .....	23	S.	Pennsylvania No. 5, .....		Leg fractured by fall of roof in pillar place.
8	James Naughton, ...	Irish, .....	Laborer, .....	19	S.	Von Storch, ..		Collar bone broken by falling car door which he had raised to shovel out rock in an abandoned place.
10	Joseph Mifisto, .....	Italian, .....	Miner, .....	40	M.	Bull's Head, ..		Head and arm bruised by delayed blast 18 feet from face of chamber.
13	Charles Mylniec, ....	Russian, ....	Miner, .....	45	M.	Von Storch, ..		Shoulders and back bruised by fall of roof at face.
20	Anthony Summa, ....	Italian, .....	Laborer, .....	23	M.	Spencer, ....		Leg fractured by fall of roof at face.

Nov.	26	{ David Kinsey, ..... Thomas Scott, .....	American, .. English, .....	Bratticeman, Company man, ..	35 67	{ M. M. }	Pancoast, ..	Kinsey was severely burned and Scott slightly burned about head, face and hands. They went into an abandoned place for some boards and lighted the gas.
Dec.	30	Francis Flood, .....	American, ..	Miner, .....	54	M.	Cayuga, ....	Leg fractured by sliding coal at face.
	2	John Teldis, .....	Slavonian, ..	Laboret, .....	40	M.	Manville, ...	Head and hand injured by falling roof at face.
	5	James Petril, .....	Italian, .....	Mucker, .....	26	S.	Underwood, ..	Arm fractured by falling down shaft.
	9	Joseph High, .....	Hungarian, ..	Miner, .....	27	M.	Pancoast, ..	Back broken by fall of roof at face.
	10	John Kaskin, .....	Slavonian, ..	Miner, .....	39	S.	Manville, ...	Neck and body injured by premature blast at face.
	11	Mike Romonofski, ..	Polish, .....	Miner, .....	38	M.	Manville, ...	Head injured by premature blast at face. He inadvertently lighted the squib with his naked light, while placing tools in place of safety.
	18	John Tearrow, .....	Russian, ....	Miner, .....	31	S.	Von Storch, ..	Face and hands burned and bruised by premature blast at face.
		Michael Tucovik, ....	Russian, ....	Miner, .....	43	M.	Diamond, ...	Leg fractured while prying down piece of coal at face.
	23	Aleck Belconitch, ..	Slavonian, ..	Laboret, .....	20	S.	Manville, ...	Back bruised by fall of roof at face. He was helping miner to stand prop under what proved to be a piece of "hell" roof.
	28	Felix Cararo, .....	Italian, .....	Laboret, .....	24	M.	Pennsylvania No. 1.	Three ribs fractured and feet bruised by fall of roof at face while watching miner taking down bad roof.
	31	Daniel Driscoll, .....	American, ..	Miner, .....	55	S.	Mt. Pleasant	Leg fractured and back and arm injured by the sliding of loose top coal that had recently been shot down at face.

Lackawanna

## CONDITION OF COLLIERIES

## DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Diamond Colliery: Diamond No. 2 Shaft.—Ventilation and drainage fair. Safety conditions good. Diamond Drift.—Ventilation and drainage fair. Safety conditions good. Diamond Tripp Shaft.—Ventilation, drainage and safety conditions good.

Brisbin Colliery.—Ventilation fair. Drainage and safety conditions good.

Cayuga Colliery.—Ventilation, drainage and safety conditions good.

Manville Colliery.—Ventilation and drainage fair. Safety conditions good.

## PENNSYLVANIA COAL COMPANY

Pennsylvania Nos. 1 and 5 Collieries.—Ventilation, drainage and safety conditions good.

## SCRANTON COAL COMPANY

Pine Brook Colliery.—Ventilation, drainage and safety conditions good.

Mount Pleasant Colliery.—Main Shaft—Ventilation, drainage and safety conditions good.

Little Shaft.—Ventilation and drainage fair. Safety conditions good.

West Ridge Colliery.—Ventilation and drainage fair. Safety conditions good.

## HUDSON COAL COMPANY

Von Storch Colliery.—Ventilation and drainage fair. Safety conditions good.

## PRICE-PANCOAST COAL COMPANY

Pancoast Colliery.—Ventilation, drainage and safety conditions good.

## GREEN RIDGE COAL COMPANY

Green Ridge Colliery.—Ventilation and drainage fair. Safety conditions good.

## NORTH END COAL COMPANY

North End Colliery.—Ventilation and drainage fair. Safety conditions good.

## NAY AUG COAL COMPANY

Nay Aug Colliery.—Ventilation, drainage and safety conditions fair.

## THE SPENCER COAL COMPANY

Spencer Colliery.—Ventilation good. Drainage and safety conditions fair.

## CARNEY AND BROWN COAL COMPANY

Carney and Brown Colliery.—Ventilation, drainage and safety conditions fair.

## BULL'S HEAD COAL COMPANY

Bull's Head Colliery.—Ventilation, drainage and safety conditions fair.

## CLEARVIEW COAL COMPANY

Clearview Colliery.—Ventilation and safety conditions fair. Drainage good.

## NO. 6 COAL COMPANY

No. 6 Colliery.—Ventilation and drainage fair. Safety conditions good.

## IMPROVEMENTS

## DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Diamond Colliery.—Erected a new annex to the breaker. Installed boiler feed pump, four flat slate-pickers, rock pulverizer and fuel conveyor.

Brisbin Colliery.—Rock tunnels were driven from Rock vein to Big vein; New County vein to Big vein; Four-Foot vein to Five-Foot vein. A duplex pump and 2 Jeffrey coal-cutting machines were installed.

Cayuga Colliery.—Erected new wash-house and new fan engine-house. A new fan 18 feet by 6 feet by 5 feet 6 inches was installed. Rock tunnel plane was driven from Clark vein to Diamond vein.

## PENNSYLVANIA COAL COMPANY

Pennsylvania No. 1 Colliery.—Rock plane was driven 300 feet from the Fourteen-Foot vein up through the fault to the Fourteen-Foot vein above. Erected the following concrete fireproof buildings inside the mine: Mule barn, barn-boss's house, motor-house, foreman's office and hospital.

Additional slate-pickers were installed in the breaker.

## SCRANTON COAL COMPANY

Pine Brook Colliery.—Installed 45 horse power electric hoist in the West tunnel. Tunnel was driven from Dunmore No. 2 vein to Dunmore No. 1 vein on the head of No. 4 plane, for a return airway from Dunmore No. 1 vein.

West Ridge Colliery.—Removed 400 feet of roof for grading purposes.

Mt. Pleasant Colliery.—Tunnel was driven from Dunmore No. 3 vein to Dunmore No. 2 vein for transportation purposes.

## HUDSON COAL COMPANY

Von Storch Colliery.—Completed concrete barn in Dunmore No. 2 vein and also concrete barn in Dunmore No. 4 vein.

## PRICE-PANCOAST COAL COMPANY

Pancoast Colliery.—Rock tunnel 400 feet long was driven from Clark vein to New County vein. A gravity plane 600 feet long was built in No. 2 vein, and one 600 feet long in Diamond vein.

Outside: Erected a new annex to the wash-house.

## NAY AUG COAL COMPANY

Nay Aug Colliery.—Made manway for Second vein, installed 20 horse power electric hoist and 10 horse power electric hoist in Top vein. Erected two mule barns outside, hospital, warehouse and oil house, and shops. Installed 60-ton Marion steam shovel; 2 new stationary steam engines; and 600 foot scraper line on bank. Breaker is lighted by electricity, all wires in conduit.

## CLEARVIEW COAL COMPANY

Clearview Colliery.—Installed a General Electric 35 K. W. motor generator set in engine house, and a Jeffrey 28-A short-wall electric coal-cutting machine in the Four-Foot vein.



## FOURTH DISTRICT

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LACKAWANNA COUNTY

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Scranton, Pa., February 18, 1913.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor to transmit herewith my report as Inspector of Mines for the Fourth Anthracite District, for the year ending December 31, 1912, as required by the Act of April 14, 1903.

Respectfully submitted,

J. T. Reese, Inspector.

## SUMMARY OF STATISTICS

Number of collieries, .....	14
Number of mines, .....	29
Number of mines in operation, .....	29
Number of tons of coal shipped to market, .....	3,770,292
Number of tons used at mines for steam and heat, .....	134,969
Number of tons sold to local trade and used by employes, ..	167,902
Number of tons produced, .....	4,073,163
Number of tons produced by compressed air machines, ..	.....
Number of tons produced by electrical machines, .....	30,129
Number of persons employed inside of mines, .....	6,883
Number of persons employed outside, .....	1,814
Number of fatal accidents inside of mines, .....	26
Number of fatal accidents outside, .....	2
Number of non-fatal accidents inside of mines, .....	50
Number of non-fatal accidents outside, .....	.....
Number of tons of coal produced per fatal accident inside, ..	156,660
Number of tons produced per fatal accident outside, ....	2,036,581
Number of tons produced per fatal accident inside and outside, .....	145,470
Number of persons employed per fatal accident inside, ..	265
Number of persons employed per fatal accident outside, ..	907
Number of persons employed per fatal accident inside and outside, .....	311
Number of persons employed per non-fatal accident inside, ..	138
Number of persons employed per non-fatal accident out- side, .....	.....
Number of persons employed per non-fatal accident inside and outside, .....	138
Number of wives made widows, .....	18
Number of children made orphans, .....	51
Number of steam locomotives used inside of mines, ....	5
Number of steam locomotives used outside, .....	7
Number of compressed air locomotives used inside, .....	.....
Number of compressed air locomotives used outside, ....	.....
Number of electric motors used inside, .....	81
Number of electric motors used outside, .....	3
Number of fans in use, .....	24
Number of furnaces in use, .....	.....
Number of gaseous mines in operation, .....	21
Number of non-gaseous mines in operation, .....	8
Number of new mines opened, .....	.....
Number of old mines abandoned, .....	.....

## TABLE A

## PRODUCTION OF COAL

Names of Operators	Tons
--------------------	------

Delaware, Lackawanna and Western Railroad Company,	3,299,718
Hudson Coal Company, .....	233,958
Scranton Coal Company, .....	209,102
People's Coal Company, .....	167,938
Carleton Coal Company, .....	7,737
Minooka Coal Company, .....	7,722
Thorne-Neal Washery Company, .....	132,353
Premier Coal Company, .....	14,374
Koehler Coal Company, .....	261

Total, .....	4,073,163
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## Production by Counties

Lackawanna, .....	4,073,163
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TABLE B.—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employees inside	Number of employees outside	Total number of employees	Number of employees inside per fatal accident	Number of employees outside per fatal accident	Number of employees inside per non-fatal accident	Number of employees outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Delaware, Lackawanna and Western Railroad Co., .....	18	1	19	36	.....	36	183,218	91,659	5,541	1,256	6,797	398	1,256	154	.....
Hudson Coal Co., .....	2	.....	2	.....	.....	.....	116,379	.....	607	248	855	393	.....	.....	.....
Seranton Coal Co., .....	4	.....	4	.....	.....	.....	52,375	29,872	508	198	616	127	.....	73	.....
Peoples Coal Co., .....	2	.....	2	6	.....	6	27,490	.....	188	116	304	94	.....	31	.....
Mingoak Coal Co., .....	.....	.....	.....	1	.....	1	.....	7,722	18	8	26	.....	.....	18	.....
Thorne-Neal Washery Co., .....	.....	1	1	.....	.....	.....	.....	.....	.....	37	37	.....	.....	.....	.....
Miscellaneous Companies, .....	.....	.....	.....	.....	.....	.....	.....	.....	21	41	62	.....	.....	.....	.....
Totals and averages for district, ...	26	2	28	50	.....	50	156,069	81,461	6,883	1,814	8,697	265	907	138	.....

TABLE C.—Classification of Fatal Accidents Inside and Outside of Mines

	Months												Totals	Percentages
	January	February	March	April	May	June	July	August	September	October	November	December		
<b>Causes of Accidents Inside</b>														
Falls of coal, .....			1		1			1					3	11.54
Falls of roof, .....		1					1	1	3	2	1		9	34.61
Mine cars, .....		1				1		1			1		4	15.38
Blasts, premature and otherwise, .....	1	1					2		1	1			6	23.08
Falling into shafts, ..		1											1	3.85
Electricity, .....										1			1	3.85
Burned by powder, ..												1	1	3.85
Fall of ice, .....		1											1	3.84
<b>Totals, .....</b>	<b>1</b>	<b>5</b>	<b>1</b>		<b>1</b>	<b>1</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>26</b>	<b>100.00</b>
<b>Causes of Accidents Outside</b>														
Machinery, .....										1			1	50.00
Suffocation in chutes, etc., .....			1										1	50.00
<b>Totals, .....</b>			<b>1</b>							<b>1</b>			<b>2</b>	<b>100.00</b>
<b>Grand totals inside and outside, .....</b>	<b>1</b>	<b>5</b>	<b>2</b>		<b>1</b>	<b>1</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>2</b>	<b>1</b>	<b>28</b>	<b>.....</b>

TABLE D.—Classification of Non-Fatal Accidents Inside and Outside of Mines

	Months												Totals	Percentages
	January	February	March	April	May	June	July	August	September	October	November	December		
<b>Causes of Accidents Inside</b>														
Falls of coal, .....	1	1	1		1			1		1			5	10.00
Falls of roof, .....	1					1	1	3	3	1	3	2	15	30.00
Mine cars, .....	3		1				1	1	1	2			12	24.00
Explosions of gas, ..		1								1			2	4.00
Blasts, premature and otherwise, .....						1		3	1	2			7	14.00
Mules, .....									1				1	2.00
Struck by coal, .....							1	1				2	4	8.00
Fall of ice, .....		1											1	2.00
Cut by axe, .....		1											1	2.00
Fell off cars, .....							1						1	2.00
Struck by prop, .....								1					1	2.00
<b>Totals, .....</b>	<b>5</b>	<b>4</b>	<b>2</b>		<b>1</b>	<b>3</b>	<b>4</b>	<b>10</b>	<b>6</b>	<b>6</b>	<b>3</b>	<b>6</b>	<b>50</b>	<b>100.00</b>
<b>Causes of Accidents Outside</b> (No Accidents)														





TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	Totals
American, .....	.....	.....	2	.....	.....	.....	.....	1	.....	1	.....	4
Welsh, .....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1
Irish, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
German, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Polish, .....	.....	4	.....	.....	.....	.....	1	1	3	1	.....	12
Italian, .....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1
Slavonian, .....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Lithuanian, .....	1	.....	.....	.....	.....	1	1	1	1	.....	.....	5
Russian, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	2
Totals, .....	1	5	2	.....	1	1	3	3	4	5	2	28

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	Totals
American, .....	1	.....	.....	.....	.....	.....	3	3	3	1	.....	15
English, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Welsh, .....	.....	.....	1	.....	.....	1	.....	1	.....	.....	.....	3
Irish, .....	1	.....	.....	.....	1	1	.....	.....	.....	1	.....	6
Polish, .....	3	4	1	.....	.....	1	.....	3	3	2	2	21
Italian, .....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1
Slavonian, .....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
Lithuanian, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Russian, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Totals, .....	5	4	2	.....	1	2	4	10	6	6	3	50

TABLE I.—Operators and mines, kind of openings, type and size of fans, size of furnaces, volume of air produced by fan or furnace per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	Kind of opening	Gaseous or non-gaseous	Method of ventilation	Diameter of fan in feet and inches	Width of blades in feet and inches	Depth of blades in feet and inches	Number of revolutions per minute	Water gauge developed—in inches	Name of fan	Power used	Number of splits of air currents	Number of cubic feet of air per minute entering the mine at inlet	Total number of cubic feet of air per minute circulating in all the splits	Number of cubic feet of air per minute passing out at outlet	Number of persons employed inside
Delaware, Lackawanna and Western Railroad Co.															
Bellevue Colliery:															
Bellevue, ..	Shaft, ..	Gaseous, ..	Fan, ..	14	4	4	112	.9	Gubal, ..	Steam, ..	10	135,910	116,585	158,300	362
Bellevue, ..	Shaft, ..	Gaseous, ..	Fan, ..	16	4.5	4.6	110	.9	Gubal, ..	Steam, ..	6	103,480	94,250	110,100	415
Bellevue, ..	Slope, ..	Gaseous, ..	Fan, ..	16	4.5	4.5	110	.9	Gubal, ..	Steam, ..	2	48,750	49,750	49,900	48
Archbald Colliery:															
Archbald, ..	Shaft, ..	Gaseous, ..	Fan, ..	24	8	6	66	1.7	Gubal, ..	Steam, ..	18	228,720	211,720	255,430	822
Archbald, ..	Slope, ..	Gaseous, ..	Fan, ..	12	4	4	100	1	Open, ..	Steam, ..	18				
Sloan Colliery:															
Sloan, ..	Shaft, ..	Gaseous, ..	Fan, ..	24	8	6	64	2.1	Gubal, ..	Steam, ..	8	161,250	152,870	166,870	400
Sloan Surface Vein, ..	Shaft, ..	Gaseous, ..	Fan, ..	24	8	6	74	2	Gubal, ..	Steam, ..	3	91,000	77,000	101,750	104
Sloan Central, ..	Shaft, ..	Gaseous, ..	Fan, ..	24	8	6	70	2.1	Gubal, ..	Steam, ..	7	150,650	129,750	151,890	343
Hyde Park Colliery:															
Hyde Park, ..	Shaft, ..	Gaseous, ..	Fan, ..	24	8	6	66	1.4	Gubal, ..	Steam, ..	13	206,500	135,500	258,000	521
Hyde Park Central, ..	Shaft, ..	Gaseous, ..	Fan, ..	14	4.5	4	116	1.4	Open, ..	Electricity, ..	3	36,700	46,100	46,100	10
Hyde Park Hampton, ..	Shaft, ..	Gaseous, ..	Fan, ..	17	4	4	100	1	Open, ..	Steam, ..	2	30,500	13,900	31,900	69
Hyde Park Surface, ..	Slope, ..	Gaseous, ..	Fan, ..	14	4.5	4	81	.8	Gubal, ..	Electricity, ..	2.5	91,040	76,900	96,800	153
National Colliery:															
National, ..	Shaft, ..	Gaseous, ..	Fan, ..	15	4	4	120	1.5	Gubal, ..	Steam, ..	8	108,900	93,400	118,750	508
Dodge Colliery:															
Dodge, ..	Shaft, ..	Gaseous, ..	Fan, ..	25	4.5	4.5	51	1.1	Gubal, ..	Steam, ..	6	116,050	99,075	17,145	291
Dodge, ..	Slope, ..	Non gas, ..	Fan, ..	12	3.5	3.5	112	.8	Gubal, ..	Steam, ..	1	41,106	34,422	47,490	119
Holden Colliery:															
Holden, ..	Shaft, ..	Gaseous, ..	Fan, ..	25	8	6	57	1.5	Gubal, ..	Steam, ..	6	130,000	121,000	144,200	292

\*Caved and flushed.

Continental Colliery: Continental, .....	Shaft, .....	Gascons, ..	Fan, .....	24	8	6	70	2	Gubal, ..	Steam, .....	19	297,060	178,810	228,100	519
Hubon Coal Co. and 22															
Greenwood Colliery Nos. 1															
Greenwood New No. 1, ..	Shaft, .....	Gascons, ..	Fan, .....	17	5	4	75	.5	Gubal, ....	Steam, .....	1	29,080	26,200	30,450	60
Greenwood Old No. 1, ..	Shaft, .....	Gascons, ..	Fan, .....	17	5	5	80	.4	Gubal, ....	Steam, .....	2	58,300	26,300	23,000	42
Greenwood No. 2, ..	Shaft, .....	Gascons, ..	Fan, .....	17	5	5	75	.4	Gubal, ....	Steam, .....	2	29,000	20,300	31,000	55
Greenwood No. 8, ..	Drift, .....	Non-gas, ..	Natural, ..	.....	.....	.....	.....	.....	.....	.....	1	18,000	17,500	19,800	82
Greenwood No. 11, ..	Drift, .....	Non-gas, ..	Natural, ..	.....	.....	.....	.....	.....	.....	.....	1	8,000	7,500	7,400	30
Greenwood No. 12, ..	Drift, .....	Non-gas, ..	Natural, ..	.....	.....	.....	.....	.....	.....	.....	1	32,000	30,300	34,100	74
Greenwood No. 14, ..	Drift, .....	Non-gas, ..	Natural, ..	.....	.....	.....	.....	.....	.....	.....	3	12,100	10,800	14,400	28
Greenwood No. 16, ..	Drift, .....	Non-gas, ..	Fan, .....	20	5	5	75	1	Gubal, ....	Steam, .....	5	10,500	9,300	12,300	38
Scranton Coal Co. Capouse Colliery:															
Capouse, .....	Shaft, .....	Gascons, ..	2 fans, .. {	20 13	5 5.5	5 5	75 80	1 1	Gubal, ....	Steam, .....	9	138,000	135,600	140,100	508
People's Coal Co. Oxford Colliery:															
Oxford, .....															
Carlleton Coal Co. Carlleton Colliery:															
Carlleton, .....	Shaft, .....	Gascons, ..	Fan, .....	16	5	5	95	.7	Gubal, ....	Steam, .....	9	112,000	105,000	112,000	188
Mineoka Coal Co. Mineoka Colliery:															
Mineoka, .....	Drift, .....	Non-gas, ..	Natural, ..	.....	.....	.....	.....	.....	.....	.....	1	5,000	6,500	7,210	21
	Slope, .....	Non-gas, ..	Natural, ..	.....	.....	.....	.....	.....	.....	.....	1	12,000	10,500	14,000	18

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	Name of General Superintendent	Post Office	Name of Superintendent	Post Office	Railroad to Mine
Delaware, Lackawanna and Western Railroad Co.						
Bellefonte, .....	Lackawanna	C. E. Tobey,	Scranton,	{ E. J. Evans, .....	Scranton,	D. L. and W.
Ardhald, .....				{ T. J. Williams, .....		
Shoen, .....				{ T. J. Williams, .....		
Hyde Park, .....				{ E. J. Evans, .....		
National, .....				{ E. J. Evans, .....		
Holden, .....				{ E. J. Evans, .....		
Continental, .....				{ T. J. Williams, .....		
Washeries						
Ardhald, .....	Lackawanna	C. E. Tobey,	Scranton,	{ T. J. Williams, .....	Scranton,	D. L. and W.
Hampton, .....				{ G. J. Wetters, .....		
Bellefonte, .....				{ T. J. Williams, .....		
Greenwood Coal Co.	Lackawanna	C. C. Rose,	Scranton,	{ E. J. Evans, .....	Scranton,	D. and H.
Greenwood Nos. 1 and 2, .....				{ E. J. Evans, .....		
Greenwood Washery, .....						
Scranton Coal Co.	Lackawanna	W. L. Allen,	Scranton,	E. R. Peckbone,	Barranceton,	D. and H.
Capouse, .....	Lackawanna		Peckville,	Daniel Young,	Scranton,	O. and W.
People's Coal Co.	Lackawanna	John G. Hayes,	Scranton,	A. G. Bennett,	Scranton,	D. L. and W.
Oxford, .....						
Carlston Coal Co.	Lackawanna	John Gibbons,	Scranton,		Scranton,	L. and W. V.
Carlston, .....						
Mineoka Coal Co.	Lackawanna	Thomas F. Quinn,	Scranton,	M. J. Raftery,	Scranton,	L. and W. V.
Mineoka, .....						
Thorne Neal Washery Co.	Lackawanna					
Mineoka Washery, .....						
Premier Coal Co.	Lackawanna					
Premier Washery, .....						
Kochler Coal Co.	Lackawanna	W. L. Schlager,	Scranton,	H. S. Carpenter,	Scranton,	D. and H.
Kochler Washery, .....						
	Lackawanna	R. P. Kochler,	Scranton,			





TABLE 2—Continued

Names of Operators and Collieries	County	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives			Number of horses and mules
										Number of pounds of powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used	
Capouse, .....	Lackawanna, .....	183,726	22,000	3,376	209,102	175	616	4	7	280,625	19,400	.....	64
Oxford, .....	Lackawanna, .....	77,418	9,506	81,014	167,938	290	304	2	6	298,750	4,500	.....	84
Carlleton, .....	Lackawanna, .....	518	.....	7,219	7,787	201	31	.....	.....	7,875	1,305	.....	6
Minoaka, .....	Lackawanna, .....	955	200	6,567	7,722	122	26	.....	1	6,000	385	.....	3
Thorne-Neal Washery Co. Minoaka Washery, .....	Lackawanna, .....	120,113	12,240	.....	132,353	49	37	1	.....	.....	.....	.....	.....
Premier Coal Co. Premier Washery, .....	Lackawanna, .....	14,374	.....	.....	14,374	130	22	.....	.....	.....	.....	.....	.....
Koehler Coal Co. Koehler Washery, .....	Lackawanna, .....	240	21	.....	261	60	9	.....	.....	.....	.....	.....	.....
Grand totals, .....	.....	3,770,292	134,969	167,902	4,073,163	.....	8,697	28	50	4,654,225	251,426	.....	698

TABLE 2.—Part 2

Names of Operators	County	Number of Boilers		Locomotives			Number of steam engines of all classes	Total horse power	Number of pumps delivering water to surface	Capacity in gallons per minute	Quantity delivered to surface per minute—gallons	Number of electric dynamos	Number of air compressors
		Cylindrical	Horse power	Tubular	Horse power	Total horse power	Steam	Air	Electric				
Delaware, Lackawanna and Western Railroad Co., ...	Lackawanna	26	1,700	50	14,752	16,452	8	...	80	31,684	21,862	19	...
Hudson Coal Co., .....		15	402	9	1,575	1,977	4	...	...	5,000	2,500	1	2
Seranton Coal Co., .....		...	...	7	1,075	1,075	...	...	...	5,700	4,500	...	1
People's Coal Co., .....		5	1,500	...	...	1,500	...	...	1	1,575	775	2	1
Carlston Coal Co., .....		...	...	...	...	...	...	...	...	...	...	...	...
Minooka Coal Co., .....		...	...	1	50	50	...	...	...	...	...	...	...
Thorne-Neal Washery Co., ..		...	...	6	500	500	...	...	...	...	...	...	...
Premier Coal Co., .....		1	20	1	75	75	...	3	1	...	...	...	...
Kochler Coal Co., .....		...	...	...	20	20	...	...	...	...	...	...	...
Totals, .....		47	3,622	74	18,027	21,649	17	...	84	43,959	29,637	22	5

TABLE 3.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside										Outside										Grand total inside and outside	
		Mine foremen	Assistant mine foremen	Fire bosses and assistants	Miners	Miners' laborers	Drivers and runners	Doorboys and helpers	Pumpmen	Company men	All other employes	Total inside	Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Slatepickers (boys)	Slatepickers (men)	Bookkeepers and clerks	All other employes	Total outside		
Delaware, Lackawanna and Western Railroad Co.	Lackawanna	15	9	45	1,886	1,905	326	136	50	484	685	5,541	.....	15	56	116	295	32	33	709	1,256	6,797	
Hudson Coal Co.	Lackawanna	1	1	3	239	191	106	1	3	34	7	607	.....	1	15	40	4	20	3	164	248	855	
Saratoga Coal Co.	Lackawanna	1	1	4	160	123	83	19	6	.....	169	508	.....	1	9	11	13	9	1	42	108	616	
Peoples Coal Co.	Lackawanna	1	1	1	71	58	21	9	3	13	.....	188	.....	1	1	8	.....	.....	.....	62	116	304	
Carleton Coal Co.	Lackawanna	1	.....	.....	.....	.....	.....	.....	.....	3	.....	21	.....	1	1	.....	.....	.....	.....	.....	10	31	
Minooka Coal Co.	Lackawanna	1	.....	.....	.....	.....	.....	.....	.....	1	.....	18	.....	1	1	.....	.....	.....	.....	.....	8	26	
Thacker Coal Co.	Lackawanna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	27	37	
Knicker Coal Co.	Lackawanna	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	22	22	
Totals		51	13	55	2,396	2,263	542	165	62	535	891	6,883	3	24	89	184	323	96	48	1,017	1,814	8,697	

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked in Breaker												
		January	February	March	April	May	June	July	August	September	October	November	December	Total
Delaware, Lackawanna and Western Railroad Co., ..	{ Lackawanna, }	25	23	25	25	24	24	25	26	23	26	24	24	252
Hudson Coal Co., ..		16	14	14	14	13	13	14	14	12	12	12	12	138
Scranton Coal Co., ..		19	17	17	17	15	15	17	18	16	16	16	17	175
People's Coal Co., ..		21	19	19	19	19	20	21	20	19	21	19	21	220
Carlleton Coal Co., ..		24	16	15	15	17	17	9	25	20	24	24	23	201
Minnesota Coal Co., ..		14	11	14	14	8	8	8	8	9	14	16	16	132



TABLE 4.—Fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 26	Joe Ginzinehay, .....	Lithuanian, ..	Miner, ....	40	M.	1	4	Capouse, .....	Lackawanna,	Instantly killed by blast at face of cham-
Feb. 3	Joe Belskey, .....	Polish, .....	Miner, ....	28	S.	....	....	Sloan, .....		ber.
9	Anthony Labata, .....	Polish, .....	Miner, ....	31	M.	1	1	Archbald, .....		Instantly killed by premature blast at face
13	Steve Jacob, .....	Slavonian, ..	Driver, ...	19	S.	....	....	Cajouse, .....		of chamber.
14	John Rolsky, .....	Polish, .....	Laborer, ..	18	S.	....	....	Sloan, .....		Instantly killed by fall of roof at face of
26	Mike Stetson, .....	Polish, .....	Laborer, ..	38	M.	1	3	Sloan, .....		chamber.
March 2	George Mullerig, .....	American, ..	Laborer, ..	18	S.	....	....	Minooka Washery		Killed by car on gangway. He was riding
29	Edward Simpson, .....	American, ..	Laborer, ..	27	M.	1	1	Sloan, .....		on front bumper, which ran into door.
May 25	Joe Sanders, .....	Welsh, .....	Miner, ....	40	M.	1	....	Sloan, .....		Instantly killed by falling off cage into
June 1	Elee Nichols, .....	Lithuanian, ..	Runner, ..	18	M.	....	....	Capouse, .....		shaft.
July 6	Anthony Chuplis, .....	Lithuanian, ..	Miner, ....	22	M.	....	....	Capouse, .....		Instantly killed on cage by being struck
15	George Swartz, .....	Polish, .....	Miner, ....	35	M.	1	4	Archbald, .....		by falling ice.
17	John Tomarzo, .....	Italian, .....	Laborer, ..	31	M.	1	1	Oxford, .....		Suffocated in coal pocket. Outside.
Aug 5	William Yurkonis, .....	Lithuanian, ..	Miner, ....	37	M.	1	2	Hyde Park, .....		Instantly killed by fall of top coal at face
15	Stanley Tupish, .....	Polish, .....	Laborer, ..	37	M.	1	4	Bellevue, .....		of gangway.
21	William Castorline, ..	American, ..	Driver, ...	17	S.	....	....	Oxford, .....		Instantly killed by fall of coal after blast
Sept. 11	John Demko, .....	Polish, .....	Miner, ....	54	M.	1	....	Archbald, .....		on main road.
14	Mike Kifloyde, .....	Polish, .....	Miner, ....	35	S.	....	....	Sloan, .....		Killed by being caught by cars while sprag-
										ging. He forgot to remove headblock.
										Instantly killed by blast at face. He tried
										to fire two holes at same time.
										Killed by fall of rock at face after firing
										blast.
										Killed by blast, which blew through pillar
										near face.
										Killed by fall of rock saddle at face of
										chamber.
										Killed by fall of top coal while restanding
										prop.
										Seriously injured by falling in front of
										motor. Died Aug. 30.
										Instantly killed by fall of bell roof at
										face.
										Instantly killed by premature blast.

Sept.	20	Nicholas Gaul, .....	Lithuanian, .....	Miner, ....	40	M.	1	7	Dodge, .....	Instantly killed by fall of rock at face of chamber.
Oct.	12	John Scholopskie, ....	Polish, .....	Laborer, ..	41	M.	1	3	Dodge, .....	Fatally injured. Died September 21.
		Charles Granskie, ....	Polish, .....	Miner, ....	28	M.	1	2	Sloan, .....	Killed by electric shock. Sat on grounded motor.
17		Leonard Krause, ....	German, ....	Jig-tender, ..	19	S.	...	...	Hyle Park, ....	Killed by breaker machinery. Outside.
		Tony Baloskie, .....	Polish, .....	Laborer, ..	37	M.	1	3	Archbald, .....	Killed by blast that blew through cross-cut.
13		Peter Grouskie, .....	Russian, ..	Miner, ....	32	M.	1	1	Greenwood No. 2, ..	Instantly killed by fall of rock at face of chamber.
Nov.	21	Patrick Toole, .....	American, ..	Miner, ....	41	M.	1	7	Archbald, .....	Instantly killed by fall of rock at face after firing blast.
		Patrick Flannery, ....	Irish, .....	Company man, ..	45	M.	1	1	Holden, .....	Instantly killed while trying to replace car on track on gangway.
Dec.	23	John Pascoe, .....	Polish, .....	Laborer, ..	23	S.	...	...	Bellevue, .....	Killed by fall of rock opening chamber.
		Anthony Perko, .....	Russian, ...	Miner, ....	49	M.	1	7	Greenwood No. 1, ..	Burned by powder at face. A spark from the lamp on his head ignited the powder.

Lackawanna.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 3	Mike Limonskie, .....	Polish, .....	Laborer, .....	28	S.	Bellevue, .....	Lackawanna.	Scalp lacerated by fall of top coal at face of chamber.
	John McNiff, .....	Irish, .....	Oilier, .....	50	M.	Capouse, .....		Arm and chest injured between cars at foot of shaft.
24	John Konalskie, .....	Polish, .....	Laborer, .....	25	M.	Arelbald, .....		Leg fractured by car on gangway.
	Arthur Cooney, .....	American, .....	Company man, ..	23	S.	Continental, .....		Leg fractured while riding on front bumper of car.
31	Frank Tuscoloskie, ..	Polish, .....	Laborer, .....	28	M.	Continental, .....		Head cut by fall of roof at face of chamber.
Feb. 1	Alex Roboskie, .....	Polish, .....	Miner, .....	26	M.	Dodge, .....		Neck, face and arms burned by gas at face of chamber.
16	Joe Gileskoskie, ....	Polish, .....	Miner, .....	40	M.	Hyde Park, .....		Hand lacerated by axe while making cap piece at face of chamber.
17	Alex Polisz, .....	Polish, .....	Laborer, .....	47	S.	Sloan, .....		Leg fractured by fall of top coal at face of chamber.
26	Theodore Galke, .....	Polish, .....	Footman, .....	20	S.	Sloan, .....		Leg fractured by fall of ice in shaft.
March 8	Esdras Thomas, .....	Welsh, .....	Company man, ..	42	M.	Capouse, .....		Hip injured while riding on front bumper of car.
19	Edward Seluga, .....	Polish, .....	Laborer, .....	27	S.	Continental, .....	Lackawanna.	Head and back injured by fall of top coal at face of workings.
May 25	Mike Kenna, .....	Irish, .....	Laborer, .....	30	S.	Minooka, .....		Legs fractured by fall of coal from rib at face.
June 1	Henry Williams, .....	Welsh, .....	Brakeman, .....	24	M.	Bellevue, .....		Toe crushed by cars near face.
4	Daniel Cavanaugh, ..	Irish, .....	Miner, .....	38	S.	Bellevue, .....		Face and hands cut by flying coal from blast at face.
27	John McGarragh, .....	Polish, .....	Laborer, .....	35	M.	Bellevue, .....		Hip bone broken at face of chamber by fall of roof after blast.
July 5	Tom Armitage, .....	American, ..	Motorman, .....	21	M.	Hyde Park, .....		Back injured by motor running into closed door.
6	John McCoy, .....	American, ..	Miner, .....	54	M.	Sloan, .....		Foot smashed by fall of roof at face of chamber.
10	Philip Roman, .....	Italian, .....	Company man, ..	76	M.	Oxford, .....		Internally injured by slipping off of cars that he was climbing.
18	Tom Haggerty, .....	American, ..	Driver, .....	19	S.	Capouse, .....		Back fractured by coal flying off the rib at face.
Aug. 2	John Salanie, .....	Slavonian, ..	Laborer, .....	49	M.	Holden, .....		Leg fractured by falling rock at face of chamber.

Aug.	8	Steve Goniaz, .....	Polish, .....	Laborer, .....	18	S. Dodge, .....	Side contused by climbing cars while in motion.
	13	John Lunny, .....	Irish, .....	Tracklayer, .....	60	M. Hyde Park, .....	Head bruised by team of mules knocking prop on him on gangway.
	15	Joe Fletcher, .....	American, ..	Laborer, .....	27	M. Oxford, .....	Small bone in arm broken by falling coal in shaft.
	20	Anthony Pallofskie, ..	Polish, .....	Miner, .....	30	M. Bellevue, .....	Back injured by flying coal from blast.
	25	Tom Millard, .....	American, ..	Laborer, .....	32	M. Dodge, .....	Ribs broken and hips bruised by fall of rock at face.
		Joe Burke, .....	Irish, .....	Laborer, .....	27	M. Dodge, .....	Contusion of spine and back by fall of rock at face.
	27	Joe Gunkle, .....	Polish, .....	Miner, .....	40	M. Dodge, .....	Ribs fractured and shot wounds by premature blast at face.
	28	Tom Francis, .....	American, ..	Miner, .....	31	M. Dodge, .....	Arm lacerated and back injured by premature blast at face of chamber.
		Roland Roberts, .....	Welsh, .....	Miner, .....	45	M. Dodge, .....	Rib fractured and scalp wounded by fall of top coal at face of chamber.
Sept.	6	William Regan, .....	American, ..	Runner, .....	28	S. Capouse, .....	Hip and pelvis injured by fall of rock in rock chamber.
		Chester Devole, .....	American, ..	Driver, .....	18	S. Capouse, .....	Ankle and instep sprained between bumpers of cars.
	10	John Suppy, .....	Polish, .....	Miner, .....	32	M. Hyde Park, .....	Head cut and leg bruised by flying coal from blast through cross-cut.
	11	Peter Mollet, .....	Polish, .....	Laborer, .....	22	S. Hyde Park, .....	Head cut and leg fractured by bell roof falling at face of chamber.
	14	George Williams, .....	American, ..	Driver, .....	16	S. Hyde Park, .....	Head cut and lacerated by kick of mule.
	30	Joe Orzel, .....	Polish, .....	Laborer, .....	44	M. Hyde Park, .....	Head cut by falling roof while barring down at face.
Oct.	7	Joe Burke, .....	American, ..	Driver, .....	19	S. Hyde Park, .....	Leg bruised by cars.
	10	Harry Suko, .....	Polish, .....	Laborer, .....	28	M. Oxford, .....	Purged by gas at face of chamber.
	11	James Mulkerin, .....	Irish, .....	Driver, .....	26	M. Oxford, .....	Legs fractured by fall of rock on branch.
	17	Joe Vitkoskie, .....	Polish, .....	Miner, .....	45	M. Archball, .....	Head cut and bruised by blast through cross-cut.
		Kostiak Subroniah, ..	Russian, .....	Laborer, .....	50	M. Dodge, .....	Compound fracture of leg by cars on branch.
	21	Tom Ord, .....	English, .....	Miner, .....	30	S. Hyde Park, .....	Leg fractured while running from blast.
Nov.	2	Julius Jankoskie, .....	Polish, .....	Laborer, .....	43	S. Sloan, .....	Leg fractured by fall of rock at face of chamber.
	13	Anthony Maloskie, ..	Lithuanian, ..	Laborer, .....	38	S. Capouse, .....	Arm fractured by fall of rock at face of chamber.
	26	Adam Oshrosky, .....	Polish, .....	Laborer, .....	36	M. Bellevue, .....	Back and abdomen injured by fall of rock while standing a prop at face.
Dec.	2	John Talmeskie, .....	Polish, .....	Laborer, .....	49	M. Continental, .....	Hip fractured by runaway car that upset on gangway.
	19	Lekoy Williams, .....	American, ..	Driver, .....	18	S. Capouse, .....	Hip fractured by being caught between cars. His light went out.
	22	Harry Sutton, .....	American, ..	Footman, .....	22	S. Oxford, .....	Leg broken by falling coal at foot of shaft.
		Harry Fitzsimmons, ..	American, ..	Footman, .....	23	S. Oxford, .....	Head cut by falling coal at foot of shaft. False signal.
	23	Mike Koritch, .....	Polish, .....	Laborer, .....	38	M. Sloan, .....	Head lacerated by small pieces of roof falling at face.
	28	Evan Evans, .....	American, ..	Miner, .....	34	S. Sloan, .....	Side contused by small bell roof falling at face.

Lackawanna.

## CONDITION OF COLLIERIES

### DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Sloan Colliery.—Ventilation in Sloan Surface vein good. A new air shaft has been sunk to improve the conditions.

Bellevue, Archbald, Hyde Park, National, Dodge, Holden and Continental Collieries.—Ventilation, drainage and condition as to safety good.

### HUDSON COAL COMPANY

Greenwood Nos. 1 and 2 Collieries.—The ventilation where fans were in use was good. In the openings where natural causes were depended upon, the quantity was a variable one, but sufficient to maintain a healthy condition. Drainage fair. Condition as to safety, good.

### SCRANTON COAL COMPANY

Capouse Colliery.—Ventilation, drainage and condition as to safety good.

### PEOPLE'S COAL COMPANY

Oxford Colliery.—Ventilation, drainage and condition as to safety fair.

### CARLETON COAL COMPANY

Carleton Colliery.—Ventilation, drainage and condition as to safety fair

### MINOOKA COAL COMPANY

Minooka Colliery.—Ventilation, drainage and condition as to safety fair.

## IMPROVEMENTS

### DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Bellevue Colliery.—New annex to breaker under construction. Installed railing around all dangerous parts of machinery. Built a new annex to the breaker, which will clean all of the small sized coal, from pea coal down, and installed in this annex all modern machinery and proper safety appliances, which will greatly decrease accidents caused by coming in contact with exposed machinery. A Welch automatic overwind or engine stop was installed on supply shaft engine.

Archbald Colliery.—All the inside buildings reconstructed of incombustible material. A tunnel 134 feet long was driven to redeem pillars from Rock vein to Diamond vein. An automatic overwinding device was attached to hoisting engine.

Sloan Colliery.—The new air shaft was sunk a distance of 640 feet to No. 3 Dunmore. Installed a fan 24 by 8 by 6. An automatic overwinding device was attached to hoisting engines.



Hyde Park Colliery.—A 7 by 12 foot tunnel, 220 feet long was driven from the Rock to the Diamond vein. All the inside buildings reconstructed of incombustible material. An automatic overwinding device was attached to the hoisting engines.

National Colliery.—An air shaft was sunk from the surface to the Clark vein, a depth of 75 feet. This shaft is 10 by 16 feet in the clear. A rock tunnel was driven on a 45 degree pitch from M. gangway, Clark vein to B. gangway, Clark vein, 7 feet by 12 feet, a distance of 60 feet for ventilating purposes. Installed railings around all dangerous parts of machinery and openings in the breaker and around all engines and machinery outside. Installed a Welch automatic overwind device or engine stop on hoisting engines. Completed new concrete wash-house, which is properly ventilated, and there is a person in charge to see that it is kept clean.

Dodge Colliery.—New locomotive house outside. Installed additional electric locomotive, 750-gallon fire-pump, and a Welch automatic overwind device or engine stop on hoisting engine. New concrete mule barn inside. New concrete wash-house completed; it is properly ventilated and there is a person in charge to see that it is kept clean. Started work on a new haulage system on the outside to safely convey the cars from the drift to the head of the breaker, which is now being done by an engine. This will be completed in a short time. Installed railings around all dangerous parts of machinery and openings in and around the breaker.

Holden Colliery.—Installed railings around all dangerous parts of machinery in and around the breaker. A Welch automatic overwind device or engine stop was installed on hoisting engines. Completed new concrete wash-house, which is properly ventilated, and there is a person in charge to see that it is kept clean.

Continental Colliery.—A second opening and return air course was driven from No. 1 Dunmore to Clark vein, a distance of 73 feet. An air shaft and second opening was also sunk near outcrop to Diamond vein, depth 30 feet. An automatic overwinding device was attached to hoisting engine.

Hampton Washery.—All the buildings were reconstructed of incombustible material.

This Company is educating its non-English speaking employes. Colonel R. A. Phillips, the General Manager, conceived the idea of having pictures taken in the mines showing how accidents occur and how they are prevented. Two hundred of these pictures appear in book form with simple statements. The book was prepared under the direction of Colonel Phillips and Mr. C. E. Tobey, Superintendent of the Coal Mining Department, and ten thousand copies have been printed and will be distributed to groups known as extension schools in the various mining communities.

This Company is promoting this educative work through the local branch of the Young Men's Christian Association, and it deserves much greater patronage than it is getting at present, as it instructs not only in theory, but also in practice.

#### SCRANTON COAL COMPANY

Capouse Colliery.—All inside buildings reconstructed of incombustible material.

## PEOPLE'S COAL COMPANY

Oxford Colliery.—New mule barn built inside of incombustible material, and electric lights installed in barn and at foot. One gasoline motor installed.

## MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in the City Hall, Scranton, April 15 and 16. The Board of Examiners was composed of J. T. Reese, Mine Inspector, Scranton; John P. Corcoran, Superintendent, Rendham; William J. Jenkins, Miner, Scranton; James W. Reese, Miner, Scranton.

The following persons passed a satisfactory examination and were granted certificates:

## MINE FOREMEN

Joseph, Hosker, Joseph R. Linney, Stephen Burner, Coyne; John R. Jones, Adam Newell, Howell Powell, John Griffiths, Samuel Harts-horn, Robert Scott, Harry B. Watkins, Roland Samuel, John P. Reese, John S. Cole, Caradoc Thomas, Anthony Zurowski, Michael T. McGraw, Benjamin Hughes, Richard J. Hawkins, John J. McHugh, Robert A. Timlin, John Richards, Scranton; David W. Francis, Daniel Reynolds, Taylor; William Williams, Throop; Patrick F. Kelly, Old Forge; Frank E. Law, Wyoming; John L. Robertson, Moosic.

## ASSISTANT MINE FOREMEN

John Pearce, Thomas B. James, George Hodges, Sidney Miller, William Mildiz, Mathias Gehen, Thomas Fenton, Edward Phillips, Scranton; William Phillips, Taylor; William A. Gallagher, Rendham.

## FIFTH DISTRICT

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LACKAWANNA AND LUZERNE COUNTIES

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Rendham, Pa., February 20, 1913.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor to transmit my report as Inspector of Mines for the Fifth Anthracite District, for the year ending December 31, 1912, as required by Act of April 14, 1903.

Respectfully submitted,

Augustus McDade, Inspector.

## SUMMARY OF STATISTICS

Number of collieries, .....	12
Number of mines, .....	33
Number of mines in operation, .....	33
Number of tons of coal shipped to market, .....	2,847,208
Number of tons used at mines for steam and heat, .....	239,765
Number of tons sold to local trade and used by employes, .....	44,939
Number of tons produced, .....	3,131,912
Number of tons produced by compressed air machines, ..	.....
Number of tons produced by electrical machines, .....	.....
Number of persons employed inside of mines, .....	5,185
Number of persons employed outside, .....	1,777
Number of fatal accidents inside of mines, .....	17
Number of fatal accidents outside, .....	6
Number of non-fatal accidents inside of mines, .....	41
Number of non-fatal accidents outside, .....	3
Number of tons of coal produced per fatal accident inside, ..	184,230
Number of tons produced per fatal accident outside, ..	521,985
Number of tons produced per fatal accident inside and outside, .....	136,117
Number of persons employed per fatal accident inside, ..	305
Number of persons employed per fatal accident outside, ..	296
Number of persons employed per fatal accident inside and outside, .....	303
Number of persons employed per non-fatal accident inside, ..	126
Number of persons employed per non-fatal accident outside, .....	592
Number of persons employed per non-fatal accident inside and outside, .....	158
Number of wives made widows, .....	14
Number of children made orphans, .....	36
Number of steam locomotives used inside of mines, .....	1
Number of steam locomotives used outside, .....	11
Number of compressed air locomotives used inside, .....	.....
Number of compressed air locomotives used outside, .....	.....
Number of electric motors used inside, .....	69
Number of electric motors used outside, .....	.....
Number of fans in use, .....	23
Number of furnaces in use, .....	.....
Number of gaseous mines in operation, .....	16
Number of non-gaseous mines in operation, .....	17
Number of new mines opened, .....	3
Number of old mines abandoned, .....	2

TABLE A  
PRODUCTION OF COAL

Names of Operators	Tons
Pennsylvania Coal Company, .....	1,171,221
Delaware, Lackawanna and Western Railroad Company, .....	866,302
Jermyn and Company, .....	502,070
Elliot, McClure and Company, .....	247,458
Hillside Coal and Iron Company, .....	212,043
Hudson Coal Company, .....	113,742
Lehigh Valley Coal Company, .....	15,394
Moosic Coal Company, .....	3,682
	<hr style="border-top: 3px double #000;"/>
Total, .....	3,131,912

Production by Counties

Lackawanna, .....	2,292,927
Luzerne, .....	838,985
	<hr style="border-top: 3px double #000;"/>
Total, .....	3,131,912



TABLE B—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Number of employees inside	Number of employees outside	Total number of employees	Number of employees inside per fatal accident	Number of employees outside per fatal accident	Number of employees inside per non-fatal accident	Number of employees outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total								
Pennsylvania Coal Co., .....	2	4	6	11	.....	11	585,610	1,526	691	2,217	763	172	139	.....
Delaware, Lackawanna and Western Railroad Co., .....	9	1	10	7	1	8	96,256	1,669	485	2,155	184	485	297	485
Lehigh Valley Coal Co., .....	3	1	3	4	1	5	251,035	843	193	1,036	421	193	211	193
Illinois Coal and Iron Co., .....	.....	.....	.....	5	.....	5	82,486	611	144	755	205	.....	153	.....
Hudson Coal Co., .....	.....	.....	.....	1	.....	1	212,042	219	157	376	.....	.....	240	.....
Lehigh Valley Coal Co., .....	1	.....	1	12	1	13	113,742	250	124	374	250	.....	91	124
Miscellaneous Companies, .....	.....	.....	.....	1	.....	1	15,394	31	7	38	.....	.....	31	.....
Totals and averages for district, .....	17	6	23	41	3	44	184,230	5,185	1,777	6,962	305	296	126	592

TABLE C.—Classification of Fatal Accidents Inside and Outside of Mines

	Months												Percentages
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
<b>Causes of Accidents Inside</b>													
Falls of coal, .....							1	1	4				6
Falls of roof, .....								12			12		4
Mine cars, .....						1							1
Explosions of gas, ....					1								2
Explosions of powder and dynamite, .....					1							1	2
Blasts, premature and otherwise, .....								1					1
Totals, .....					2	1	1	4	4		2	3	17
<b>Causes of Accidents Outside</b>													
Cars, .....										1			1
Machinery, .....				1				1					2
Burned by hot ashes, ..				3									3
Totals, .....				4				1		1			6
Grand totals inside and outside, .....				4	2	1	1	5	4	1	2	3	23

TABLE D.—Classification of Non-Fatal Accidents Inside and Outside of Mines

	Months												Percentages
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
<b>Causes of Accidents Inside</b>													
Falls of coal, .....							1						1
Falls of roof, .....	1	4			1	1	2		1	1	3	1	15
Mine cars, .....	12		1			1		1	1	1	1	1	9
Explosions of gas, ....							2		2				10
Blasts, premature and otherwise, .....			1										1
Falling into slopes, etc., .....										1			1
Mules, .....								1				1	2
Struck by piece of rock, ..	1												1
Struck by rope, .....											1		1
Totals, .....	4	4	2		1	2	11	2	4	3	5	3	41
<b>Causes of Accidents Outside</b>													
Machinery, .....	1												1
Fell off mule, .....										1			1
Struck by iron bucket, ..									1				1
Totals, .....	1								1	1			3
Grand totals inside and outside, .....	5	4	2		1	2	11	2	5	4	5	3	44

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	Totals
<b>Inside</b>												
Miners, .....	...	...	...	...	2	1	1	2	3	...	1	9
Miners' laborers, .....	...	...	...	...	...	...	...	1	1	...	1	5
Drivers and runners, .....	...	...	...	...	...	...	...	1	...	...	...	1
Shu h-men, .....	...	...	...	...	...	...	...	...	...	...	...	2
Totals, .....	...	...	...	...	2	1	1	4	4	...	2	17
<b>Outside</b>												
Machinists, .....	...	...	...	1	...	...	...	1	...	...	...	1
Chute-boys, .....	...	...	...	...	...	...	...	...	...	...	...	1
Laborers, .....	...	...	...	3	...	...	...	1	...	...	...	3
Footmen, .....	...	...	...	...	...	...	...	...	...	1	...	1
Totals, .....	...	...	...	4	...	...	...	1	...	1	...	6
Grand totals inside and outside, .....	...	...	...	4	2	1	1	5	4	1	2	23

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	Totals
<b>Inside</b>												
Mine foremen, .....	...	...	...	...	...	...	...	...	1	...	...	1
Miners, .....	...	2	1	...	...	...	2	...	1	1	...	13
Miners' laborers, .....	1	1	...	...	1	...	1	1	...	...	1	15
Drivers and runners, .....	...	...	...	...	...	...	1	...	...	1	...	6
Company men, .....	1	...	...	...	...	...	...	...	...	...	1	4
Masons, .....	...	...	1	...	...	...	...	...	...	1	...	1
Motormen, .....	...	...	...	...	...	...	...	...	...	...	...	1
Totals, .....	4	4	2	...	1	2	11	2	4	2	5	41
<b>Outside</b>												
Farmen, .....	...	...	...	...	...	...	...	...	1	...	...	1
Engineers and firemen, .....	1	...	...	...	...	...	...	...	...	...	...	1
Drivers, .....	...	...	...	...	...	...	...	...	...	1	...	1
Totals, .....	1	...	...	...	...	...	...	...	1	1	...	3
Grand totals inside and outside, .....	5	4	2	...	1	2	11	2	5	4	5	44

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	December
Totals												
American, .....				1				2		1		1
Welsh, .....									1			1
Irish, .....					1	1						
Polish, .....								2				
Italian, .....												
Slavonian, .....											1	2
Lithuanian, .....					1						1	
Russian, .....												1
Totals, .....				4	2	1	1	5	4	1	2	3

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	December
Totals												
American, .....	1									2	1	1
English, .....			1									
Welsh, .....									2		1	
Scotch, .....	1											
Irish, .....	1	1							2	2	1	1
Polish, .....	2	1	1		1		10	2	2	2	1	1
Italian, .....		2										
Slavonian, .....											1	
Austrian, .....						1						
Russian, .....					1		1					
Canadian, .....									1			
Totals, .....	5	4	2		1	2	11	2	2	4	3	2

TABLE I.—Operators and mines, kind of openings, type and size of fans, size of furnaces, volume of air produced by fan or furnace per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	Kind of opening	Gaseous or non-gaseous	Method of ventilation	Diameter of fan in feet and inches	Width of blades in feet and inches	Depth of blades in feet and inches	Number of revolutions per minute	Water gauge developed—in inches	Name of fan	Power used	Area of furnace bars in square feet	Number of splits of air currents	Number of cubic feet of air per minute entering the mine at inlet	Total number of cubic feet of air per minute circulating in all the splits	Number of cubic feet of air per minute passing out at outlet	Number of persons employed inside
Pennsylvania Coal Co. Old Forge Colliery: No. 1 shaft, No. 1 slope, No. 2 shaft, Mountain tunnel (Marv- vill), Mountain tunnel (Clark Acad),	Shaft, ..	Gaseous, ..	Fan, .....	20	6.5	5.4	52	9	Centrif.,	Steam, .....	..	..	51,500	69,000	68,300	138
	Slope, ..	Gaseous, ..	Fan, .....	17	4.5	4.5	24	9	Centrif.,	Steam, .....	..	..	21,200	20,600	22,000	35
	Shaft, ..	Non-gas., }	Fan, .....	20	6.5	5.4	55	1.0	Centrif.,	Electricity, }	..	..	83,560	76,210	95,665	250
	Drift, ....	Non-gas. }	Fan, .....	20	6.5	5.4	59	1.0	Centrif.,	Electricity, }	..	..	70,805	62,215	77,465	271
	Drift, ....	Non-gas. }	Fan, .....	20	6.5	5.4	50	5	Centrif.,	Steam, .....	..	..	71,125	65,370	83,150	261
Central Colliery: Laws shaft, Laws slope, No. 12 shaft,	Shaft, ....	Gaseous, }	Fan, .....	20	6.5	5.4	50	5	Centrif.,	Steam, .....	..	..	75,250	61,720	92,063	360
	Slope, ....	Non-gas. }	Fan, .....	20	6.5	5.4	60	6	Centrif.,	Steam, .....	..	..	55,100	48,900	105,000	89
	Shaft, ....	Gaseous, }	Fan, .....	20	6.5	5.4	60	6	Centrif.,	Steam, .....	..	..	55,100	48,900	105,000	89
Delaware, Lehighanna and Weston Railroad Co. Pyre Colliery: Pyre shaft, Pyre slope,	Shaft, ....	Gaseous, ..	Fan, .....	16	5.0	4.5	90	9	Centrif.,	Steam, .....	..	13	213,920	210,390	251,740	655
	Slope, ....	Gaseous, ..	Fan, .....	24	8.0	6.0	72	1.8	Centrif.,	Steam, .....	..	..	..	..	..	..
	Slope, ....	Gaseous, }	Fan, .....	25	8.0	7.0	60	1.0	Centrif.,	Steam, .....	..	10	275,140	165,665	222,922	625
Taylor Colliery: Taylor shaft, Taylor slope,	Shaft, ....	Gaseous, }	Fan, .....	25	8.0	7.0	60	1.0	Centrif.,	Steam, .....	..	..	..	..	..	..
	Slope, ....	Gaseous, }	Fan, .....	25	8.0	7.0	60	1.0	Centrif.,	Steam, .....	..	..	..	..	..	..





TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	Name of General Superintendent	Post Office	Name of Superintendent	Post Office	Railroad to Mine
Pennsylvania Coal Co. Old Forge, .....	Lackawanna, { Luzerne, .....	William W. Inglis, ..	Scranton, .....	John W. Reid, .....	Moosic, .....	Erie
Delaware, Lackawanna and Western Railroad Co. Pine, .....	Lackawanna, { Lackawanna, { Luzerne, .....	R. A. Phillips, .....	Scranton, .....	[ T. J. Williams, .... E. J. Evans, .... E. J. Evans, .... T. J. Williams, ....	Scranton, .....	D. L. and W.
Pine Washery, .....	Lackawanna, ..	E. B. Jermyn, .....	Scranton, .....	John P. Corcoran, ..	Rendham, .....	{ Erie, D. L. and W. { and Lehigh Valley
Jermyn and Co. Jermyns Washery, .....	Lackawanna, ..	R. W. Rees, .....	Old Forge, .....	.....	.....	{ Lehigh Valley and { D. L. and W.
THE L. M. L. and Co. Sifley, .....	Lackawanna, ..	William W. Inglis, ..	Scranton, .....	John W. Reid, .....	Moosic, .....	Erie
Hillsdale Coal and Iron Co. Consolidated, .....	Luzerne, .....	C. C. Rose, .....	Scranton, .....	E. R. Pettebone, ...	Dorranecton, ..	D. and H.
Hudson Coal Co. Spring Brook, .....	Lackawanna, { Luzerne, .....	F. M. Chase, .....	Wilkes-Barre, .....	W. D. Owens, .....	Pittston, .....	Lehigh Valley
Lehigh Valley Coal Co. Austin, .....	Lackawanna, ..	John F. Cotter, ....	Wyoming, .....	.....	.....	Erie
Moosic Coal Co. Moosic, .....	Lackawanna, ..	.....	.....	.....	.....	.....



TABLE 2--Continued

Names of Operators and Collieries	County	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employees	Number of fatal accidents	Number of non-fatal accidents	Explosives			Number of horses and mules
										Number of pounds of powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used	
Sibley, .....	Lackawanna, .....	269,582	26,580	11,296	247,458	213	758	3	5	302,950	46,883	6,322	50
Consolidated, .....	Luzerne, .....	157,534	16,469	8,040	212,013	230	336	.....	1	126,850	.....	.....	41
Hudson Coal Co., Spring Brook, .....	Lackawanna, .....	28,585	10,346	795	39,726	77	113	.....	4	49,225	1,746	.....	15
Langcliffe, .....	Luzerne, .....	62,727	9,337	1,952	74,016	101	261	1	9	38,550	2,898	.....	59
Totals, .....	.....	91,312	19,683	2,747	113,742	.....	374	1	13	101,775	4,644	.....	65
Lehigh Valley Coal Co., *Austin, .....	Lackawanna, .....	15,231	163	.....	15,394	.....	38	.....	1	14,425	150	.....	10
Moosic Coal Co., Moosic, .....	Lackawanna, .....	3,154	.....	528	3,682	131	18	.....	.....	9,375	1,075	.....	2
Grand totals, .....	.....	2,847,208	239,765	44,939	3,131,912	.....	6,952	53	41	2,875,850	143,778	36,792	467

\*Coal prepared at William A. Colliery, Eighth District.

TABLE 2. —Part 2

Names of Operators	County	Number of Boilers				Locomotives			Total horse power	Number of steam engines of all classes	Total horse power	Number of pumps delivering water to surface	Capacity in gallons per minute	Quantity delivered to surface per minute gallons	Number of electric dynamos	Number of air compressors
		Cylindrical	Horse power	Tubular	Horse power	Steam	Air	Electric								
Pennsylvania Coal Co.,	Lackawanna,	.....	.....	48	5,600	5,600	6	....	46	41	5,090	14	19,390	9,400	4	.....
Delaware, Lackawanna and Western Railroad Co.,	Lackawanna,	8	160	26	4,645	4,805	1	....	23	57	2,053	9	11,046	5,852	2	.....
Jermyn and Co.,	Lackawanna,	.....	.....	4	2,000	2,000	.....	.....	.....	25	1,959	2	10,060	7,000	1	.....
Elliot, McClure and Co.,	Lackawanna,	.....	.....	3	1,200	1,200	.....	.....	.....	23	1,190	2	3,500	2,500	.....	.....
Hillside Coal and Iron Co.,	Luzerne,	.....	.....	8	800	800	.....	.....	.....	11	850	1	609	500	.....	.....
Hudson Coal Co.,	Lackawanna,	.....	.....	12	1,125	1,125	2	.....	.....	33	1,196	6	4,296	1,500	.....	.....
Lehigh Valley Coal Co.,	Luzerne,	.....	.....	.....	.....	.....	1	.....	.....	.....	15	1	500	400	.....	.....
Moosic Coal Co.,	Lackawanna,	1	60	.....	60	.....	.....	.....	.....	2	50	1	200	100	.....	.....
Totals,	.....	9	220	101	15,370	15,590	12	....	69	197	14,043	36	49,316	27,252	7	21



TABLE 3.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside										Outside								Grand total inside and outside			
		Mine foremen	Assistant mine foremen	Fire bosses and assistants	Miners	Miners' laborers	Drivers and runners	Doorboys and helpers	Pumpmen	Company men	All other employes	Total inside	Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Slatepickers (boys)	Slatepickers (men)	Bookkeepers and clerks			All other employes	Total outside
Pennsylvania Coal Co.,	{ Lackawanna, .. }	4	11	2	585	498	29	43	11	152	191	1,726	1	3	55	40	147	36	5	404	691	2,217	
Delaware, Lackawanna	{ Luzerne, .. }	4	2	16	595	549	119	30	13	180	152	1,660	...	5	19	47	130	14	11	259	485	2,145	
and Western Railroad	{ Lackawanna, .. }	2	2	11	305	305	81	10	5	122	...	842	2	2	18	21	47	35	6	62	193	1,036	
Co.,	{ Lackawanna, .. }	1	1	6	290	200	75	29	5	78	64	64	1	1	7	9	33	19	5	67	144	758	
Jermyn and Co.,	{ Lackawanna, .. }	2	2	...	82	95	31	1	...	25	11	249	...	1	1	7	11	24	2	1	81	127	376
Elliot, McClure and Co.,	{ Luzerne, .. }	2	2	...	84	102	37	1	1	18	3	250	...	2	8	27	7	18	4	58	124	374	
Hillside Coal and Iron	{ Lackawanna, .. }	2	1	1	9	8	4	...	1	...	8	31	...	...	2	...	...	...	1	4	7	38	
Co.,	{ Luzerne, .. }	1	...	...	8	3	...	...	...	...	...	12	...	...	...	2	1	...	...	3	6	18	
Hudson Coal Co.,	{ Lackawanna, .. }	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Lehigh Valley Coal Co.,	{ Lackawanna, .. }	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Monroe Coal Co.,	{ Lackawanna, .. }	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Totals,	.....	17	24	30	1,888	1,760	376	114	36	497	443	5,185	4	14	116	157	391	124	32	998	1,777	6,962	



TABLE 4.—Fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
April 2	Robert Butt, .....	American, ..	Machinist, ..	25	M.	1	3	Old Forge, ...	Lackawanna, ...	Killed by the bursting of fly wheel in pump-house at head of Old Forge No. 1 shaft. Outside.
23	{ Venjunda Verna, .. { Louis Fortuna, .... { Yoder Crook, .....	Italian, ..... Italian, ..... Polish, .....	Laborer, ..... Laborer, ..... Laborer, .....	28 45 47	S. S. M.	... ... 1	... ... 5	{ Central, .... }	Luzerne, .....	Fatally burned by hot ashes and dust from slide on culm bank at foot of Ayova bank. Verna and Fortuna died the same day and Crook the next day. They were in the act of shoveling culm when the slide came down the bank. The men were warned, but they became confused and ran in front of the slide. The top of the dump was on fire and as the slide came down hot ashes and dust were thrown out. Outside.
May 25	John Burke, .....	Irish, .....	Miner, .....	40	S.	...	...	Old Forge, ...	Lackawanna, ...	Fatally burned by explosion of gas at opening of chamber on manway. Died May 26.
27	John Baleski, .....	Lithuanian, ..	Miner, .....	46	M.	1	...	Langeliffe, ...	Luzerne, .....	Fatally burned by explosion of powder in chamber. Died May 28.
June 21	William Comar, .....	Irish, .....	Laborer, ....	44	S.	...	...	Sibley, .....	Lackawanna, ...	Fatally injured by being struck by trip of cars on haulage road. Died 3 hours later.
July 12	John Netchi, .....	Polish, .....	Laborer, ....	32	S.	...	...	Pyne, .....	Lackawanna, ...	Killed by fall of top coal at face of chamber.
Aug. 6	Henry Sellappie, ....	American, ..	Driver, .....	16	S.	...	...	Pyne, .....	Lackawanna, ...	Killed by fall of top coal on E. gangway.
7	{ Frank Dupont, ..... { John Obozowski, ...	Polish, .....	Miner, ..... Laborer, .....	39 29	M. M.	1 1	4 2	{ Jernyns, ... }	Lackawanna, ...	Killed by fall of roof at face of chamber. Miner fired a blast and required to face with laborer when saddle and fall went down.
10	Joe Matlock, .....	Polish, .....	Miner, .....	30	M.	1	3	Sibley, .....	Lackawanna, ...	Head and body burned and cut by premature blast at face of chamber. Died August 12.
28	Herbert Smith, .....	American, ..	Clute-boy, ..	16	S.	...	...	Jernyns, .....	Lackawanna, ...	Killed by being crushed between belt and air-wye in engine room under breaker. Outside.

Sept. 19	{ James Watkins, .... { Joe Sulash, ..... { Peter Madden, ....	Welsh, ..... Polish, ..... Irish, .....	Miner, ..... Laborer, ..... Miner, .....	55 21 42	M. S. M.	1 ... 1	4 ... ...	{ Tyne, ..... }	Lackawanna, }	Killed by fall of top coal at face of chamber. Watkins and Madden fired two holes, which knocked out a prop. They told the laborers to load two cars and then they would restand prop. The second car was only partly loaded when the top coal fell.
Oct. 24	Peter Wascavitch, .... L. P. Breuier, .....	Polish, ..... American, ..	Miner, ..... Footman, ...	50 52	M. M.	1 1	1 3	Sibley, ..... Halstead, ....	Lackawanna, ... Luzerne, .....	Killed by fall of top coal at end of pillar. Killed by being squeezed between two loaded rock cars at foot of rock plane.
Nov. 5	Andrew Jerelp, ..... Charles Chesko, .....	Russian, ... Slavonian, ..	Miner, ..... Laborer, ....	32 36	M. S.	1 ...	4 ...	Central, ..... Taylor, .....	Luzerne, ..... Lackawanna, ...	Outside. Killed by fall of roof at face. Back broken. He was struck by a piece of roof at face and knocked down in such manner that his back was broken.
Dec. 10	John Mando, .....	Slavonian, ...	Miner, .....	58	M.	1	5	Taylor, .....	Lackawanna, ...	Died December 3. Killed by explosion of dynamite at face of chamber.
20	{ John R. James, .... { Joe Polinski, .....	Welsh, ..... Slavonian, ..	Slushman, .. Slushman, ..	45 34	M. M.	1 1	... 2	{ Taylor, ..... }	Lackawanna, }	Killed by explosion of gas near entrance to chamber. They were in the act of closing an overflow in a brattice near entrance to No. 10 chamber for the purpose of flushing same to roof. The brattice excluded air and a body of gas formed, which was ignited by open light.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 9	Charles Kralitowsky.	Polish.	Laborer.	22	S.	Pyne.	Lackawanna.	Leg broken by being caught under car at face.
11	Michael McCourtney.	Scotch.	Miner.	35	M.	Old Forge.	Lackawanna.	Three ribs broken by piece of rock which he was loading into car, falling on him at face.
18	Lawrence McCarthy.	Irish.	Engineer.	22	S.	Spring Brook.	Lackawanna.	Arm broken by being caught by reverse lever of engine. Outside.
26	John J. Evans.	American.	Company man.	36	M.	Pyne.	Lackawanna.	Collar bone broken by being caught between car and rib on gangway.
29	Joseph Yaovits.	Polish.	Miner.	35	M.	Spring Brook.	Lackawanna.	Head cut, skull and jaw fractured by fall of roof at face.
Feb. 1	Angelo Denotch.	Italian.	Miner.	21	S.	Sibley.	Lackawanna.	Internally injured by fall of roof at face.
19	Dominick Irliski.	Polish.	Miner.	29	S.	Lauchliffe.	Luzerne.	Ribs and leg fractured by fall of roof at face.
21	Nicholas Walsh.	Irish.	Miner.	48	M.	Sibley.	Lackawanna.	Back bruised by fall of roof at face.
28	Fred Thomasett.	Italian.	Laborer.	47	M.	Sibley.	Lackawanna.	Arm cut and back bruised by fall of roof at face.
March 2	George Witizitch.	Polish.	Miner.	32	M.	Old Forge.	Lackawanna.	Compound fracture of skull by delayed blast at face.
26	David Robinson.	English.	Mason.	51	M.	Old Forge.	Lackawanna.	Two ribs fractured by being caught between car and rib on gangway road.
May 23	Joseph Nitowski.	Polish.	Laborer.	28	M.	Spring Brook.	Lackawanna.	Ribs fractured and hip dislocated by fall of roof at face.
June 17	Joseph Koshine.	Austrian.	Laborer.	32	S.	Consolidated.	Luzerne.	Hips, abdomen and side of chest contused and three ribs broken by being knocked under car that was bumped off track at working face.
22	Mike Andriesch.	Russian.	Laborer.	18	S.	Old Forge.	Lackawanna.	Leg broken by fall of roof at face.
	Frank Drons.	Polish.	Miner.	58	M.			Hands and face slightly burned by explosion of gas at face. Drons and Sledish went into face of their working place with naked light and ignited the gas.
July 18	Marlin Sledish.	Polish.	Miner.	33	M.			Drons, Sledish, Honslos and Nomencluck were at face and Wasser, Fossier and Borts were in first cross-cut from face, when explosion occurred.
	Carl Wasser.	Polish.	Laborer.	42	M.	Lauchliffe.	Luzerne.	
	Stanley Fossier.	Polish.	Laborer.	25	S.			
	Andrew Borts.	Polish.	Laborer.	29	S.			
	Fred Honslos.	Polish.	Laborer.	27	S.			
	Michael Nomencluck.	Polish.	Laborer.	28	S.			



July	18	William Fredoski, ...	Polish, .....	Driver, .....	16	S.	Langellife, .....	Luzerne, .....	Back and ribs broken by being thrown against ribs on gangway road by the concussion of an explosion.
	22	John Yawovits, .....	Polish, .....	Laborer, .....	41	M.	Old Forge, .....	Lackawanna, .....	Thigh fractured by fall of roof at face.
	23	Barney Melesky, .....	Russian, .....	Miner, .....	26	M.	Stibley, .....	Lackawanna, .....	Spinal vertebrae by fall of roof at face.
Aug.	17	Max Duchi, .....	Polish, .....	Laborer, .....	42	M.	Pyne, .....	Lackawanna, .....	Leg fractured by fall of top coal at face.
	23	Joseph Bahid, .....	Polish, .....	Laborer, .....	32	M.	Austin, .....	Lackawanna, .....	Clavicle squeezed by being caught between car and prop at foot of slope.
	23	Anthony Warmas, ...	Polish, .....	Driver, .....	18	S.	Pyne, .....	Lackawanna, .....	Four teeth knocked out by being kicked by mule on head of Big vein plane.
Sept.	13	Joe Berdosky, .....	Polish, .....	Company man, ..	26	S.	Halstead, .....	Luzerne, .....	Leg cut by being struck by rock car that jumped off track along gangway road.
		James Tibbs, .....	Welsh, .....	Mine foreman, ..	45	M.	{ Jermyns, .....	Lackawanna, .....	Hand and face burned by explosion of gas at face of chamber on Back Branch.
	26	Mike Douglass, .....	Polish, .....	Company man, ..	29	S.	Central, .....	Luzerne, .....	Leg broken and hip dislocated by fall of roof at face.
	30	Charles Llewellyn, ....	Welsh, .....	Foreman, .....	36	M.	Jermyns, .....	Lackawanna, .....	Pelvic bone splintered and kidney dislocated by being struck by elevator bucket, outside, was thrown from washery window.
Oct.	10	George String, .....	Polish, .....	Motorman, .....	19	S.	Old Forge, .....	Lackawanna, .....	Internally injured by being squeezed between motor and car at opening of chamber while pushing car around curve.
	15	John Mudrick, .....	Polish, .....	Miner, .....	34	M.	Old Forge, .....	Lackawanna, .....	Ribs fractured, cut over left eye and shoulder and head bruised by fall of roof at face.
	17	Leland Hall, .....	American, ..	Driver, .....	17	S.	Spring Brook, .....	Lackawanna, .....	Collar bone broken. His foot caught in stretcher and he was knocked down one hundred feet from face of chamber.
	19	James Monaghan, ...	American, ..	Driver, .....	18	S.	Halstead, .....	Luzerne, .....	Leg fractured by being thrown from mule's back. Outside.
Nov.	5	Vincent Goula, .....	Slavonian, ...	Laborer, .....	21	S.	Central, .....	Luzerne, .....	Back contused by fall of roof at face.
	8	Anthony Matter, .....	Italian, .....	Miner, .....	45	M.	Old Forge, .....	Lackawanna, .....	Leg fractured by fall of roof at face.
	21	Thos. J. Davis, .....	Welsh, .....	Company man, ..	25	M.	Pyne, .....	Lackawanna, .....	Arm cut off near shoulder by being struck by flying rope on head No. 3 plane.
	23	Noble Howerth, .....	American, ..	Driver, .....	17	S.	Jermyns, .....	Lackawanna, .....	Thigh broken by being squeezed between car and ribs on gangway.
Dec.	20	John Gunter, .....	Polish, .....	Laborer, .....	22	M.	Central, .....	Luzerne, .....	Leg broken by fall of roof at face.
	10	Joseph Williams, ....	American, ..	Driver, .....	19	S.	Stibley, .....	Lackawanna, .....	Several bones in hand broken by being kicked by mule on gangway road.
	13	Thomas McDermott, ...	Irish, .....	Driver, .....	22	S.	Jermyns, .....	Lackawanna, .....	Leg broken by being caught between bumpers of two mine cars on gangway.
	23	John Otrack, .....	Polish, .....	Miner, .....	33	M.	Taylor, .....	Lackawanna, .....	Back broken by fall of roof at face.

## CONDITION OF COLLIERIES

## PENNSYLVANIA COAL COMPANY

Old Forge Colliery.—Ventilation, drainage and condition as to safety good. Colliery is mining pillars to some extent.

Central Colliery.—Ventilation, drainage and general condition as to safety good. Colliery is mining pillars.

## DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Pyne Colliery.—Ventilation, drainage and condition as to safety good. Colliery is mining pillars.

Taylor Colliery.—Ventilation, drainage and condition as to safety good. Pillars are being robbed.

Halstead Colliery.—Ventilation, drainage and general condition as to safety fair. Colliery is mining pillars.

## JERMYN AND COMPANY

Jermyns Colliery.—Ventilation, drainage and general condition as to safety, good. Robbing pillars extensively.

## ELLIOT, McCLURE AND COMPANY

Sibley Colliery.—Ventilation, drainage and condition as to safety good. Colliery is mining pillars.

## HILLSIDE COAL AND IRON COMPANY

Consolidated Colliery.—Ventilation, drainage and condition as to safety good. Robbing pillars.

## HUDSON COAL COMPANY

Spring Brook and Langeliffe Collieries.—Ventilation, drainage and condition as to safety good. Mining pillars.

## LEHIGH VALLEY COAL COMPANY

Austin Colliery.—Ventilation, drainage and general condition as to safety fair. Robbing pillars almost exclusively.

## MOOSIC COAL COMPANY

Moosic Colliery.—Ventilation, drainage and condition as to safety good.

## IMPROVEMENTS

## PENNSYLVANIA COAL COMPANY

Old Forge Colliery.—A slush pump 24 by 10 by 36 inches was installed for the purpose of pumping slush to a bore hole near No. 1 shaft where a pulverizer is erected to crush breaker slate. Both slush and slate go down the same bore hole to fill and secure abandoned workings.

An 80 horsepower electric hoist was installed at Corey slope and a fireproof engine house built. A fan 15 feet in diameter, driven by a 55 horsepower motor, was installed in a fireproof fan house to properly ventilate the workings of the Corey slope.

Central Colliery.—No. 13 shaft has been abandoned as a hoisting shaft. A motor road was made from No. 13 to Laws shaft, and the coal is hoisted at Laws shaft. No 13 shaft is only used as a pumping station and for lowering and hoisting men.

A new electric pump has been installed in Laws shaft, capable of handling 1,000 gallons of water per minute.

#### DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Pyne Colliery.—A second opening and return airway, 7 by 12, was driven from the Clark to the No. 1 Dunmore vein, pitch 25 degrees, total length 78 feet. A Welch automatic overwind device, or engine stop, was installed on the hoisting engines.

Taylor Colliery.—Concrete breaker and washery completed and put in operation during the month of July.

#### JERMYN AND COMPANY

Jermyns Colliery.—A new wash-house was built of brick and concrete, 80 by 20 feet, to accommodate 200 men and boys, with shower bath and lockers. A supply house was built of brick and concrete, 80 by 24 feet. Made slope from outside to Clark vein, to be used as second opening, also air shaft from Clark vein to Monkey vein. Balance plane in No. 2 mine. A new tower was erected at No. 3 shaft.

#### ELLIOT, McCLURE AND COMPANY

Sibley Colliery.—Concrete stables were completed in No. 2 Dunmore vein, also one in No. 3 Dunmore vein. Two Lehigh Valley double jigs for the preparation of egg and stove coal were installed in the breaker. An additional air compressor is being installed. A new compound duplex Jeanesville pump, with steam cylinders 22 and 34 inches, 16 inch plunger, 36 inch stroke, is being placed in position in the Dunmore vein. Big vein is being opened by a drift north of shaft. This drift has been driven about 300 feet.

#### HILLSIDE COAL AND IRON COMPANY

Consolidated Colliery.—Made a new opening on the North dip for hoisting slope for Red Ash vein. Engines moved from inside to outside. Fan and fan-house, car and blacksmith shop, barns, storehouses, locomotive house, foreman's office, emergency hospital, wash-house and boiler plant, were built near slope. This was done on account of fire in surface vein under location of old buildings near breaker.



## SIXTH DISTRICT

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### LUZERNE COUNTY

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Pittston, Pa., February 21, 1913.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor to transmit herewith my report as Inspector of Mines for the Sixth Anthracite District, for the year ending December 31, 1912, as required by the Act of April 14, 1903.

Respectfully submitted,

H. McDONALD,  
Inspector.



## SUMMARY OF STATISTICS

Number of collieries, .....	15
Number of mines, .....	41
Number of mines in operation, .....	41
Number of tons of coal shipped to market, .....	4,279,404
Number of tons used at mines for steam and heat, .....	429,576
Number of tons sold to local trade and used by employes, .....	47,035
Number of tons produced, .....	4,756,015
Number of tons produced by compressed air machines, ..	.....
Number of tons produced by electrical machines, .....	.....
Number of persons employed inside of mines, .....	8,626
Number of persons employed outside, .....	2,785
Number of fatal accidents inside of mines, .....	40
Number of fatal accidents outside, .....	5
Number of non-fatal accidents inside of mines, .....	57
Number of non-fatal accidents outside, .....	4
Number of tons of coal produced per fatal accident inside, .....	118,900
Number of tons produced per fatal accident outside, ....	951,203
Number of tons produced per fatal accident inside and out- side, .....	105,689
Number of persons employed per fatal accident inside, ...	215
Number of persons employed per fatal accident outside, .....	557
Number of persons employed per fatal accident inside and outside, .....	253
Number of persons employed per non-fatal accident inside, .....	151
Number of persons employed per non-fatal accident out- side, .....	696
Number of persons employed per non-fatal accident inside and outside, .....	187
Number of wives made widows, .....	25
Number of children made orphans, .....	53
Number of steam locomotives used inside of mines, .....	.....
Number of steam locomotives used outside, .....	28
Number of compressed air locomotives used inside, ....	12
Number of compressed air locomotives used outside, ....	.....
Number of electric motors used inside, .....	51
Number of electric motors used outside, .....	.....
Number of fans in use, .....	46
Number of furnaces in use, .....	.....
Number of gaseous mines in operation, .....	21
Number of non-gaseous mines in operation, .....	20
Number of new mines opened, .....	1
Number of old mines abandoned, .....	.....

## TABLE A

## PRODUCTION OF COAL

Names of Operators	Tons
Pennsylvania Coal Company, .....	2,820,530
Hudson Coal Company, .....	609,524
Hillside Coal and Iron Company, .....	544,971
Lehigh Valley Coal Company, .....	530,014
Delaware and Hudson Company, .....	196,213
Traders Coal Company, .....	20,303
Yost Mining Company, .....	13,218
Wilkes-Barre Colliery Company, .....	11,073
McCauley Coal Company, .....	10,169
Total, .....	<u>4,756,015</u>

## Production by Counties

Luzerne, .....	<u>4,756,015</u>
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TABLE B—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employees inside	Number of employees outside	Total number of employees	Number of employees inside per fatal accident	Number of employees outside per fatal accident	Number of employees inside per non-fatal accident	Number of employees outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Pennsylvania Coal Co., .....	24	2	26	20	1	21	117,522	141,026	4,869	1,583	6,452	203	791	243	1,583
Hudson Coal Co., .....	7	3	10	19	2	21	32,080	32,080	1,271	332	1,603	181	111	67	166
Hillside Coal and Iron Co., .....	3	.....	3	7	1	8	181,657	77,853	1,107	376	1,483	369	.....	188	376
Lehigh Valley Coal Co., .....	4	.....	4	9	.....	9	132,503	58,899	723	233	956	181	.....	80	.....
Delaware and Hudson Co., .....	1	.....	1	2	.....	2	196,213	98,106	405	146	551	405	.....	202	.....
Traders Coal Co., .....	1	.....	1	.....	.....	.....	20,303	.....	153	53	206	153	.....	.....	.....
Miscellaneous Companies, .....	.....	.....	.....	.....	.....	.....	.....	.....	98	62	160	.....	.....	.....	.....
Totals and averages for district, ....	40	5	45	57	4	61	118,900	83,438	8,626	2,785	11,411	215	557	151	696

TABLE C.—Classification of Fatal Accidents Inside and Outside of Mines

	Months												Percentages	
	January	February	March	April	May	June	July	August	September	October	November	December		Totals
Causes of Accidents Inside														
Falls of coal, .....	2	1	2	.....	1	2	.....	2	3	1	1	1	6	15.00
Falls of roof, .....	.....	1	2	.....	.....	.....	.....	2	.....	1	1	3	18	45.00
Mine cars, .....	.....	2	.....	.....	1	.....	1	2	.....	1	1	.....	8	20.00
Explosions of gas, ....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1	2	5.00
Explosions of powder and dynamite, .....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2.50
Blasts, premature and otherwise, .....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	1	.....	3	7.50
Electricity, .....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	2.50
Struck by piece of ice, .....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2.50
Totals, .....	4	4	4	.....	2	3	2	5	4	3	4	5	40	100.00
Causes of Accidents Outside														
Cars, .....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	20.00
Suffocation in chutes, etc., .....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	3	.....	4	80.00
Totals, .....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	3	.....	5	.....
Grand totals inside and outside, .....	5	4	4	.....	2	4	2	5	4	3	7	5	45	100.00

TABLE D.—Classification of Non-Fatal Accidents Inside and Outside of Mines

	Months												Percentages	
	January	February	March	April	May	June	July	August	September	October	November	December		Totals
Causes of Accidents Inside														
Falls of coal, .....	2	1	2	.....	.....	1	1	.....	.....	2	.....	3	4	7.02
Falls of roof, .....	2	6	2	.....	1	1	3	3	.....	.....	.....	.....	11	19.30
Mine cars, .....	.....	6	.....	.....	1	1	.....	.....	.....	4	.....	3	16	28.07
Explosions of gas, .....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	8	14.04
Blasts, premature and otherwise, .....	.....	.....	1	.....	1	1	1	.....	2	1	.....	.....	7	12.29
Falling into slopes, etc., .....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1.75
Struck by ropes, .....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	3.51
Struck by drills, .....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	1.75
Struck by pieces of rock, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	1.75
Struck by pieces of coal, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	1.75
By falling, .....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1.75
By concussion from falls of roof, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	.....	.....	4	7.02
Totals, .....	6	8	6	.....	2	4	5	3	3	7	4	9	57	100.00
Causes of Accidents Outside														
Cars, .....	.....	.....	.....	.....	1	.....	.....	.....	1	.....	.....	.....	1	25.00
Machinery, .....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	.....	.....	2	50.00
By mules, .....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	25.00
Totals, .....	.....	1	.....	.....	1	.....	.....	.....	1	1	.....	.....	4	100.00
Grand totals inside and outside, .....	6	9	6	.....	3	4	5	3	4	8	4	9	61	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	December
<b>Inside</b>												
Miners, .....	.....	2	3	.....	1	3	1	1	4	1	3	3
Miners' laborers, .....	2	.....	1	.....	.....	.....	.....	1	.....	1	.....	1
Drivers and runners, .....	1	1	.....	.....	1	.....	1	1	.....	1	.....	1
Doorboys and helpers, .....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Company men, .....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Rockmen, .....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Brakemen, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Masons, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
<b>Totals, .....</b>	<b>4</b>	<b>4</b>	<b>4</b>	.....	<b>2</b>	<b>3</b>	<b>2</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Outside</b>												
Dumpmen, .....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Laborers, .....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	3	.....
<b>Totals, .....</b>	<b>1</b>	.....	.....	.....	.....	<b>1</b>	.....	.....	.....	.....	<b>3</b>	.....
<b>Grand totals inside and outside, .....</b>	<b>5</b>	<b>4</b>	<b>4</b>	.....	<b>2</b>	<b>4</b>	<b>2</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>7</b>	<b>5</b>

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	December
<b>Inside</b>												
Mine foremen, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Miners, .....	3	1	3	.....	1	3	1	1	3	3	.....	4
Miners' laborers, .....	3	3	.....	.....	.....	.....	1	.....	3	3	1	.....
Drivers and runners, .....	.....	2	2	.....	1	1	2	1	.....	1	.....	2
Doorboys and helpers, .....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Company men, .....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Linemen, .....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Footmen, .....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1
Chargemen, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
<b>Totals, .....</b>	<b>6</b>	<b>8</b>	<b>6</b>	.....	<b>2</b>	<b>4</b>	<b>5</b>	<b>3</b>	<b>3</b>	<b>7</b>	<b>4</b>	<b>9</b>
<b>Outside</b>												
Engineers and firemen, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Topmen, .....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Runners, .....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pumpmen, .....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
<b>Totals, .....</b>	.....	<b>1</b>	.....	.....	<b>1</b>	.....	.....	.....	<b>1</b>	<b>1</b>	.....	.....
<b>Grand totals inside and outside, .....</b>	<b>6</b>	<b>9</b>	<b>6</b>	.....	<b>3</b>	<b>4</b>	<b>5</b>	<b>3</b>	<b>4</b>	<b>8</b>	<b>4</b>	<b>9</b>



TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	Totals	December	November	October	September	August	July	June	May	April	March	February	January
American, .....	9	1	1	1	2	1	1	1	1	1	1	1	2
English, .....	1	1	1	1	1	1	1	1	1	1	1	1	1
Welsh, .....	2	1	1	1	1	1	1	1	1	1	1	1	1
Scotch, .....	2	1	1	1	1	1	1	1	1	1	1	1	1
Irish, .....	1	1	1	1	1	1	1	1	1	1	1	1	1
German, .....	1	1	1	1	1	1	1	1	1	1	1	1	1
Polish, .....	1	1	1	1	2	1	1	3	1	1	1	2	1
Italian, .....	10	3	2	1	1	1	1	1	1	1	1	1	1
Slavonian, .....	3	1	1	1	1	1	1	1	1	1	1	1	1
Lithuanian, .....	4	1	1	1	1	1	1	1	1	1	1	1	1
Russian, .....	3	1	1	1	1	1	1	1	1	1	1	1	1
Totals, .....	45	5	7	3	4	5	2	4	2	1	4	4	5

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	Totals	December	November	October	September	August	July	June	May	April	March	February	January
American, .....	15	3	2	2	2	2	1	1	1	1	1	2	1
Irish, .....	4	1	1	1	1	1	1	1	1	1	1	1	1
Polish, .....	27	4	2	4	2	1	3	1	1	1	2	5	3
Italian, .....	6	2	1	1	1	1	1	1	1	1	1	1	1
Slavonian, .....	3	1	1	1	1	1	1	1	1	1	1	1	1
Lithuanian, .....	3	1	1	1	1	1	1	1	1	1	1	1	1
Russian, .....	3	1	1	1	1	1	1	1	1	1	1	1	1
Totals, .....	61	9	4	8	4	3	5	4	3	1	6	9	6

TABLE I.—Operators and mines, kind of openings, type and size of fans, size of furnaces, volume of air produced by fan or furnace per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	Kind of opening	Gaseous or non-gaseous	Method of ventilation	Diameter of fan in feet and inches	Width of blades in feet and inches	Depth of blades in feet and inches	Number of revolutions per minute	Water gauge developed—in inches	Name of fan	Power used	Area of furnace bars in square feet	Number of splits of air currents	Number of cubic feet of air per minute entering the mine at inlet	Total number of cubic feet of air per minute circulating in all the splits	Number of cubic feet of air per minute passing out at outlet	Number of persons employed inside
Pennsylvania Coal Co. Barnum Colliery: Barnum No. 2, ..... Barnum No. 3, ..... Number 9 Colliery: Number 1, ..... Number 8, ..... Number 9, ..... Leadville, ..... Number 10, ..... Number 6 Colliery: Number 5, ..... Number 6, ..... Number 11, ..... Wright, ..... Ewen Colliery: Number 4, ..... Number 7, ..... Hoyt, .....	Shaft, ..	Gaseous, ..	2 Fans, {	17.0	5.2	4.8	63	1.1	Guibal, ....	Steam, .....	..	5	73,650	72,650	75,200	183
	Shaft, ..	Gaseous, ..	Fan, .....	20.0	6.6	5.5	60	1.1	Guibal, ....	Steam, .....	..	3	54,100	49,400	62,600	135
	{ Shaft, ..	Gaseous, ..	{ Fan, ...	20.0	6.6	5.5	60	.8	Guibal, ....	Steam, .....	..	5	94,330	79,225	100,125	203
				20.0	6.6	5.5	50	.8			..	4	66,200	53,100	100,320	196
				20.0	6.6	5.5	64	1.5			..	3	92,790	71,000	98,880	153
				20.0	6.6	5.5	64	1.1			..	2	62,650	51,300	71,000	59
				20.0	6.6	5.5	60	1.5			..	6	119,400	94,200	122,000	229
	Shaft, ..	Gaseous, ..	Fan, .....	20.0	6.6	5.5	75	1.1	Guibal, ....	Steam, .....	..	5	73,658	72,336	73,379	219
	Shaft, ..	Gaseous, ..	Fan, .....	20.0	6.6	5.5	68	1.1	Guibal, ....	Steam, .....	..	9	105,300	94,400	114,650	369
	Shaft, ..	Gaseous, ..	Fan, .....	20.0	6.6	5.5	64	1.5			..	4	64,100	58,100	69,100	169
	Slope, ..	Non-gas., ..	Fan, .....	12.0	4.0	3.0	52	.5			..	2	28,530	22,990	32,900	103
	{ Shaft, ..	Gaseous, {	{ 2 Fans, ..	20.0	6.6	5.5	60	1.5	Guibal, ....	Steam, .....	..	5	77,930	68,380	83,260	293
				20.0	6.6	5.5	60	.9			..	6	86,970	81,922	91,672	316
					2 Fans, ..	20.0	6.6	5.5	80		1.4			..	8	111,900

<b>Number 14 Colliery:</b>									
Number 14, .....	Shaft, ..	Gaseous, ..	3 Fans, ..	20.0	6.6	5.5	72	1.3	Guibal, ....
Number 14, .....	Tunnel, ..	Non-gas, ..	2 Fans, ..	17.0	5.0	4.0	70	.8	Guibal, ....
Courtright, .....	Slope, ..	Gaseous, ..	Fan, .....	20.0	6.6	5.5	65	.7	Guibal, ....
Diamond, .....	Slope, ..	Gaseous, ..	Fan, .....	10.0	3.3	3.3	90	.5	Guibal, ....
Chapman, .....	Slope, ..	Non-gas, ..	Natural, ..	.....	.....	.....	.....	.....	.....
<b>Hudson Coal Co.</b>									
Pine Ridge Colliery:	Shaft, ..	Gaseous, ..	2 Fans, ..	28.	8.	7.3	58	2.2	Guibal, ....
Laurel Run, .....	Slope, ..	Gaseous, ..	2 Fans, ..	28.	8.	7.3	56	2.1	Guibal, ....
<b>Lafin Colliery:</b>									
Lafin, .....	Shaft, ..	Non-gas, ..	Fan, .....	29.	5.	5.	75	.6	Guibal, ....
Lafin, .....	Tunnel, ..	Non-gas, ..	Fan, .....	14.	4.	3.6	85	.2	Guibal, ....
<b>Hillside Coal and Iron Co.</b>									
Butler Colliery:	Slope, ..	Non-gas, ..	Fan, .....	10.	2.10	1.10	110	.5	Guibal, ....
Butler Checker, .....	Slope, ..	Non-gas, ..	Fan, .....	20.	6.6	5.5	80	1.4	Guibal, ....
Butler Marcy, .....	Shaft, ..	Non-gas, ..	2 Fans, ..	15.	4.	4.	100	1.2	Guibal, ....
Thomas, .....	Slope, ..	Non-gas, ..	Fan, .....	16.	4.3	4.	100	1.2	Guibal, ....
Fernwood, .....	Slope, ..	Non-gas, ..	Fan, .....	20.	6.6	5.5	54	1.8	Guibal, ....
Clarence, .....	Slope, ..	Non-gas, ..	Natural, ..	.....	.....	.....	.....	.....	.....
<b>Lehigh Valley Coal Co.</b>									
Mineral Spring Colliery:	Shaft, ..	Gaseous, ..	Fan, .....	20.	6.6	5.6	60	1.2	Guibal, ....
Mineral Spring, .....	Slope, ..	Gaseous, ..	Fan, .....	12.	4.	3.6	100	.7	Guibal, ....
Coal Brook, .....	Tunnel, ..	Non-gas, ..	Fan, .....	20.	6.6	5.6	60	1.2	Guibal, ....
<b>Heidelberg No. 1 Colliery:</b>									
Heidelberg, .....	Shaft, ..	Gaseous, ..	Fan, .....	20.	5.8	5.	60	.4	Guibal, ....
Heidelberg, .....	Tunnel, ..	Non-gas, ..	Natural, ..	.....	.....	.....	.....	.....	Guibal, ....
Heidelberg No. 1, .....	Slope, ..	Non-gas, ..	Fan, .....	16.	4.	2.6	80	.6	Guibal, ....
Heidelberg Marcy, .....	Slope, ..	Non-gas, ..	Fan, .....	10.	4.	4.	144	.8	Guibal, ....
Heidelberg Clark, .....	Slope, ..	Non-gas, ..	Fan, .....	12.8	3.8	3.4	80	.6	Guibal, ....
<b>Delaware and Hudson Co.</b>									
Delaware Colliery:	Shaft, ..	Gaseous, ..	2 Fans, ..	22.5	6.6	5.6	70	1.7	Guibal, ....
Delaware, .....	Slope, ..	Non-gas, ..	Fan, .....	16.	5.2	4.	75	.8	Guibal, ....
<b>Traders Coal Co.</b>									
Ridgewood Colliery:	Shaft, ..	Gaseous, ..	2 Fans, ..	22.5	6.6	5.6	70	1.7	Guibal, ....
Ridgewood, .....	Slope, ..	Non-gas, ..	Fan, .....	16.	5.2	4.	75	.8	Guibal, ....
<b>Yost Mining Co.</b>									
Yost Colliery:	Shaft, ..	Gaseous, ..	2 Fans, ..	22.5	6.6	5.6	70	1.7	Guibal, ....
Yost, .....	Slope, ..	Non-gas, ..	Fan, .....	16.	5.2	4.	75	.8	Guibal, ....
<b>Yost Mining Co.</b>									
Yost, .....	Slope, ..	Non-gas, ..	Fan, .....	4.	1.10	1.	315	.3	Enclosed, ..
<b>Yost Mining Co.</b>									
Yost, .....	Slope, ..	Non-gas, ..	Fan, .....	4.	1.10	1.	315	.3	Enclosed, ..

TABLE I—Continued

Name of Operators and Mines	Number of persons employed inside	18	40
	Number of cubic feet of air per minute passing out at outlet	18,500	11,500
	Total number of cubic feet of air per minute circulating in all the splits	6,200	8,500
	Number of cubic feet of air per minute entering the mine at inlet	17,000	10,110
	Number of splits of air currents	1	2
	Area of furnace bars in square feet	..	..
	Power used	.....	.....
	Name of fan	.....	.....
	Water gauge developed—in inches	.....	.....
	Number of revolutions per minute	.....	.....
	Depth of blades in feet and inches	.....	.....
	Width of blades in feet and inches	.....	.....
	Diameter of fan in feet and inches	.....	.....
	Method of ventilation	Natural, ..	Natural, ..
	Gaseous or non-gaseous	Non-gas.,	Non-gas.,
	Kind of opening	Slope, ..	Tunnel,
	Wilkes-Barre Colliery Co. Madeira Colliery: Madeira, .....		
	McCauley Coal Co. Pickaway Colliery: Pickaway, .....		

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	Name of General Superintendent	Post Office	Name of Superintendent	Post Office	Railroad to Mine
Pennsylvania Coal Co. Barnum, ..... Number 9, ..... Number 6, ..... Number 14, ..... Ewen, .....	{ Luzerne, }	{ W. W. May, General Manager W. W. Inglis, General Superintendent }	{ Scranton, }	{ A. E. Yetter, ..... A. E. Yetter, ..... David Girvan, ..... }	Pittston, .....	Erie
Hudson Coal Co. Pine Ridge, ..... Lafin, .....	{ Luzerne, }	C. C. Rose, .....	Scranton, .....	E. R. Pettebone, ....	Dorrancton, .....	Delaware and Hudson
Hillside Coal and Iron Co. Butler, .....	{ Luzerne, }	{ W. A. May, General Manager W. W. Inglis, General Superintendent }	{ Scranton, }	{ A. E. Yetter, ..... }	Pittston, .....	Erie
Lehigh Valley Coal Co. Mineral Spring, ..... Heidelberg No. 1, .....	{ Luzerne, }	{ F. M. Chase, General Manager Thomas Thomas, General Superintendent }	{ Wilkes-Barre, ..... Wilkes-Barre, ..... }	{ J. H. Haerter, ..... W. D. Owens, ..... }	{ Wilkes-Barre, ..... Pittston, ..... }	Lehigh Valley Lehigh Valley
Delaware and Hudson Co. Delaware, .....	Luzerne, ....	C. C. Rose, .....	Scranton, .....	E. R. Pettebone, ....	Dorrancton, .....	Delaware and Hudson
Traders Coal Co. Ridgewood, .....	Luzerne, ....	E. B. Jernyn, .....	Scranton, .....	T. J. Corcoran, .....	Old Forge, .....	Erie and C. R. R. of N. J.
Yost Mining Co. Yost, .....	Luzerne, ....	H. E. Rissinger, .....	Pittston, .....	.....	.....	Erie
Wilkes-Barre Colliery Co. Madra, .....	Luzerne, ....	W. G. Thomas, .....	Wilkes-Barre, .....	.....	.....	Delaware and Hudson
McCauley Coal Co. Pickaway, .....	Luzerne, ....	William McCauley, ..	Pittston, .....	.....	.....	Lehigh Valley



TABLE 2.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured, quantity of powder, dynamite and permissible explosives used, etc.

Names of Operators and Collieries	County	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives			Number of horses and mules
										Number of pounds of powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used	
<b>Pennsylvania Coal Co.</b>													
Barnum, .....	{ Luzerne,	262,248	21,842	3,253	287,343	213	534	2	7	321,150	.....	8,068	49
Number 9, .....		654,613	74,065	7,294	735,912	250	1,360	7	4	428,325	.....	16,325	131
Number 6, .....		485,339	36,194	11,284	532,807	350	1,724	5	3	603,060	.....	43,706	130
Ewen, .....		538,862	48,822	.....	617,684	229	1,380	5	3	447,509	.....	21,018	144
Number 14, .....		629,194	55,041	2,349	686,784	251	1,694	3	2	712,850	2,333	27,700	197
Totals, .....		2,560,246	235,901	24,380	2,820,530	.....	6,452	26	21	2,423,875	2,333	116,817	651
<b>Hudson Coal Co.</b>													
Pine Ridge, .....	{ Luzerne,	377,761	60,556	3,842	442,159	223	1,048	8	11	430,825	19,475	.....	78
Ladin, .....		146,003	20,425	937	167,365	172	555	2	10	255,725	43,044	575	71
Totals, .....		523,764	80,981	4,779	609,524	.....	1,603	10	21	685,550	62,519	575	149
<b>Hillside Coal and Iron Co.</b>													
Butler, .....	Luzerne, ..	492,384	45,110	7,477	544,971	253	1,483	3	8	583,475	12,600	47,329	89
<b>Lehigh Valley Coal Co.</b>													
Mineral Spring, .....	{ Luzerne,	284,641	26,162	2,615	263,418	226	439	1	2	116,025	124,600	.....	70
Heidelberg No. 1, .....		235,441	29,249	1,906	266,596	337	517	3	7	217,556	22,850	.....	94
Totals, .....		470,082	55,411	4,521	530,014	.....	956	4	9	333,575	147,450	.....	164

Delaware and Hudson Co.	Luzerne, ..	184,784	7,835	3,594	196,213	203	551	1	2	191,150	4,374	.....	70
Delaware, .....													
Ridgewood, .....	Luzerne, ..	16,521	3,645	137	20,303	86	206	1	.....	29,400	.....	.....	22
Yost, .....	Luzerne, ..	12,499	100	619	13,218	*78	69	.....	.....	9,375	.....	.....	5
Wilkes-Barre Colliery Co.	Luzerne, ..	9,255	300	1,518	11,074	155	37	.....	.....	8,000	290	.....	10
Madefra, .....													
McCauley Coal Co.	Luzerne, ..	9,869	290	10	10,169	233	54	.....	.....	11,250	225	.....	5
Pickaway, .....													
Grand totals, .....		4,279,404	429,576	47,035	4,756,015	.....	11,411	45	61	4,285,450	229,701	164,721	1,165

\* Idle from September 1.

TABLE 2.—Part 2

Names of Operators	County	Number of Boilers			Locomotives			Number of steam engines of all classes	Total horse power	Number of pumps delivering water to surface	Capacity in gallons per minute	Quantity delivered to surface per minute—gallons	Number of electric dynamos	Number of air compressors
		Cylindrical	Horse power	Tubular	Horse power	Total horse power	Steam	Air	Electric					
Pennsylvania Coal Co.,	Luzerne,	.....	.....	97	15,956	15,956	15	12	20	212	14,719	21	31,103	17
Hudson Coal Co.,		.....	.....	24	5,140	5,140	1	.....	.....	112	5,217	6	8,200	5
Hillside Coal and Iron Co.,		.....	.....	22	3,300	3,300	1	.....	.....	33	3,275	6	4,000	.....
Lobsenz Valley Coal Co.,		.....	.....	14	1,800	2,800	2	.....	.....	35	3,310	8	6,197	.....
Delaware and Hudson Co.,		4	1,000	.....	1,825	1,825	1	.....	.....	29	1,713	3	5,200	.....
Traders Coal Co.,		.....	.....	2	800	800	.....	.....	.....	3	510	1	1,200	.....
West Mining Co.,		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wilkes-Barre Colliery Co.,		.....	.....	1	100	100	.....	.....	.....	3	150	.....	.....	.....
McCauley Coal Co.,		.....	.....	1	80	80	.....	.....	.....	1	75	.....	.....	.....
Totals,		4	29,001	170	29,001	30,011	28	12	51	440	20,069	47	55,430	22

TABLE 3.—Number of each class of employees inside and outside of mines

Names of Operators	County	Inside										Outside										Grand total inside and outside	
		Mine foremen	Assistant mine foremen	Fire bosses and assistants	Miners	Miners' laborers	Drivers and runners	Doorboys and helpers	Pumpmen	Company men	All other employes	Total inside	Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Slatepickers (boys)	Slatepickers (men)	Bookkeepers and clerks	All other employes	Total outside		
Pennsylvania Coal Co.,	Luzerne,	16	31	26	1,554	1,504	638	50	28	482	540	4,869	2	5	140	137	257	130	17	895	1,583	6,452	
Hudson Coal Co.,		2	4	11	506	440	138	12	12	133	25	1,271	...	3	18	66	24	38	6	177	382	1,603	
Hillside Coal and Iron Co.,		3	9	...	412	430	34	12	10	93	104	1,107	...	1	26	37	82	12	1	217	376	1,483	
Lehigh Valley Coal Co.,		4	9	...	339	128	120	6	10	54	53	723	...	3	30	35	...	13	6	140	233	956	
Delaware and Hudson Co.,		1	1	4	120	166	59	4	4	39	7	405	...	1	8	29	...	3	3	25	146	531	
Traders Coal Co.,		1	1	1	65	30	15	3	2	16	20	153	...	1	1	5	12	2	1	80	146	206	
Yost Mining Co.,		1	1	...	13	13	5	1	1	1	4	39	...	1	1	1	16	...	1	7	30	69	
Wilkes-Barre Colliery Co.,		...	...	...	6	6	8	...	...	...	...	19	...	1	1	1	4	...	...	8	18	37	
McCauley Coal Co.,		...	...	...	16	16	7	...	...	...	...	40	...	1	1	...	...	...	...	6	14	54	
Totals,		30	54	42	3,031	2,733	1019	76	67	818	776	8,626	5	17	231	313	421	207	35	1,555	2,788	11,411	





TABLE 4.—Fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 5	Richard Perkney, ....	American, ..	Laborer, ..	21 S.	.....	.....	.....	Barnum, .....	Luzerne,	Fatally injured by fall of rock while robbing pillars. Died January 7.
17	Frank Mokes, .....	American, ..	Runner, .....	18 S.	.....	.....	.....	Number 14, .....		Fatally injured by fall of rock on gangway road. Died the same day.
26	Cornelius Murray, ....	Irish, .....	Rock dumper, ..	38 M.	.....	1	.....	Even, .....		Killed by a car of rock falling over the top of him, outcrop.
	Thomas Kitchen, .....	Russian, ....	Laborer, .....	32 S.	.....	.....	.....	Mineral Spring, ..		Fatally injured by explosion of powder and dynamite while filling his lamp with oil at a rock. Died the same day.
29	August Sabatine, ....	Italian, .....	Rockman, .....	36 M.	.....	1	.....	Number 9, .....		Fatally injured by being struck by a piece of ore that fell down shaft. He was working in sinking the shaft. Died the same day.
Feb. 8	Frank Ruby, .....	American, ..	Driver, .....	17 S.	.....	.....	.....	Lafin, .....		Fatally injured by falling under trip of loaded cars on gangway road. Died the same day.
15	Simon Laconia, .....	Polish, .....	Miner, .....	37 M.	.....	1	5	Number 5, .....		Killed by fall of top coal at face of breast.
17	James Agostine, .....	Italian, ....	Miner, .....	38 M.	.....	1	.....	Pine Ridge, .....		Fatally injured by fall of rock at face of breast. Died the same day.
21	Stephen Suska, .....	Polish, .....	Laborer, .....	18 S.	.....	.....	.....	Even, .....		Killed by car. He ran to open the door when he heard the car coming and was caught by car on gangway.
March 15	David Heeps, .....	Scotch, ....	Miner, .....	55 M.	.....	1	6	Number 6, .....		Fatally injured by fall of rider coal while robbing pillars. Died the same day.
20	Harry Fairclough, ....	American, ..	Miner, .....	36 M.	.....	1	1	Number 9, .....	Luzerne,	Killed by fall of rock at face of gangway.
21	Fredinando Luiacone, ..	Italian, ....	Laborer, .....	21 S.	.....	.....	.....	Even, .....		Killed by rock falling on him while helping his miner to prop a piece of bad roof on breast road.
23	Walter Jeffries, .....	English, ...	Miner, .....	48 M.	.....	1	.....	Number 9, .....		Fatally injured by fall of top coal at face of breast. Died April 2.
May 25	George Reid, .....	Scotch, ....	Miner, .....	50 M.	.....	1	4	Number 9, .....		Fatally injured by fall of rock at face of breast. Died July 1.
28	Stanley Russell, .....	Polish, ....	Driver, .....	19 S.	.....	.....	.....	Number 14, .....		Killed by empty car falling over on him on gangway road. Car jumped the track.
June 7	John Polis, .....	Italian, ....	Laborer, .....	20 S.	.....	.....	.....	Even, .....		Suffocated by falling into rice coal pocket in breaker while the loaders were drawing same.

TABLE 4 - Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
June 10	Angelo Manner, .....	Italian, .....	Miner, .....	23 S.		....	....	Ewen, .....		Killed by fall of rock at face of cross-cut that he was driving.
17	Angelo Musto, .....	Italian, .....	Miner, .....	26 S.		....	....	Butler, .....		Instantly killed by fall of rock at face of breast.
25	Adam Buganosky, ....	Lithuanian, .....	Miner, .....	36 M.		1	2	Number 6, .....		Killed by premature blast. He was forcing the powder back into the hole with his drill.
July 16	William Schol, .....	American, .....	Runner, .....	19 S.		....	....	Barnum, .....		Killed by being run over by motor on gangway road. He fell off motor.
17	Stanley Rolden, .....	Polish, .....	Miner, .....	27 M.		1	1	Number 6, .....		Fatally injured. He forced powder into a hole and it exploded. Died the same day.
Aug. 8	Martin Daley, .....	American, .....	Company man, .....	27 S.		....	....	Number 6, .....		Fatally injured by empty trip of cars on gangway road while cleaning them. Died August 9.
	Charles Zigler, .....	German, .....	Miner, .....	53 M.		1	1	Heidelberg No. 1		Killed by fall of rock at face of pillar that he was drawing.
13	Sylvester Chievik, ....	American, .....	Brakeman, ....	21 S.		....	....	Pine Ridge, ....	Luzerne,	Electrocuted while riding on motor on gangway road. His head was caught between trolley wire and motor pole, 470 volts.
22	Michael Good, .....	Polish, .....	Laborer, .....	32 S.		....	....	Pine Ridge, ....		Killed by fall of rock. He and his miner were drilling a hole in it to blast it down when it fell.
27	George Kupchick, ....	Lithuanian, .....	Driver, .....	24 M.		1	1	Heidelberg No. 1		Fatally injured by falling in front of loaded car that he was driving on gangway road. Died the same day.
Sept. 6	Stanley Watchkoski, ..	Polish, .....	Miner, .....	40 M.		1	6	Ewen, .....		Killed by fall of middle rock at face of breast.
11	William Luckasavage, ..	Lithuanian, .....	Miner, .....	49 M.		1	5	Number 9, .....		Fatally injured by fall of rock while robbing pillars. Died September 13.
13	Stephen Laba, .....	Slavonian, .....	Miner, .....	32 M.		1	5	Pine Ridge, ....		Killed by fall of rock at face of breast. He was cleaning up some rock that had fallen the night before, when a large piece came down on him.

Sept. 23	George Voxmumskio, ..	Polish, .....	Miner, .....	28	M.	1	4	Number 14, .....	Fatally burned by gas. He fired a blast, which cut a feeder and in going back to face he ignited it with his open light. Died the same day.
Oct. 26	Felix Berniskio, .....	Polish, .....	Laborer, .....	33	M.	1	1	Delaware, .....	Killed by fall of rider coal at face of breast.
17	Dominick Neary, .....	American, ..	Driver, .....	16	S.	....	....	Lafin, .....	Fatally injured by car on breast road. In jumping on car he fell under it. Died October 30.
31	Joseph Fannuche, .....	Italian, .....	Miner, .....	21	S.	....	....	Butler, .....	Killed by rock falling on him at face of breast. The rock fell from a cave, knocking out two props.
Nov. 7	Joseph Xurasavage, ..	Lithuanian, ..	Miner, .....	25	M.	1	1	Number 6, .....	Killed by fall of rock. After firing a blast he went under it to drill a hole when it fell on him.
8	Caleb Werts, .....	American, ..	Miner, .....	50	M.	1	....	Barnum, .....	Killed by fall of top coal at face of pillar that he was robbing.
9	Stephen Zezutia, .....	Russian, .....	Laborer, .....	41	M.	1	2	1	These men were fatally burned and suffocated by an explosion on the culm bank outside. Died the same day.
James Matthews, .....	Welsh, .....	Laborer, .....	39	S.	....	....	....	Pine Ridge, ....	Fatally crushed between motor and rib on gangway. Died November 19.
15	Andrew Skoldo, .....	Slavonian, ..	Laborer, .....	45	M.	1	3	....	Fatally injured by blast at face of breast. He cut his match. Died December 3.
James Judge, .....	Italian, .....	Mason, .....	24	S.	....	....	....	Butler, .....	Fatally burned by gas at the face of breast. Died December 7.
27	Toney Sam, .....	Italian, .....	Miner, .....	26	S.	....	....	Ewen, .....	Fatally injured by fall of top rock on gangway. Rock was in shape of saddle back. Died the same day.
Dec. 1	Anthony Climas, .....	Polish, .....	Miner, .....	53	M.	1	2	Ewen, .....	Instantly killed by fall of rock at face of breast while barring out loose coal under it.
6	Joseph Wasko, .....	Russian, .....	Driver, .....	21	M.	1	1	Heidelberg No. 1	Fatally injured by fall of top coal. He fired a blast in face of heading in bottom bench and while working out the loose coal the top bench fell on him. Died after being taken to his home.
John Suliz, .....	Slavonian, ..	Miner, .....	45	M.	1	....	....	Ridgewood, .....	Killed by fall of rock at face of breast. He was told not to go under the rock until the miners stood a prop under it.
12	John Ryan, .....	Welsh, .....	Miner, .....	55	M.	1	2	Pine Ridge, ....	
13	Michael Darynowski, ..	Polish, .....	Laborer, .....	22	S.	....	....	Number 9, .....	

Luzerne,

TABLE 5.—Non-fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 16	Constanty Tanickiewicz	Russian, ....	Laborer, .....	25	S.	Heidelberg No. 1, .....		Leg broken by fall of rock, at face of breast.
18	Wadylaw Kalinowski,	Polish, ....	Miner, .....	28	M.	Pine Ridge, .....		Leg broken by rock falling on him at face of breast.
30	Eugene McDonald, ...	American, ..	Laborer, .....	40	M.	Pine Ridge, .....		Three ribs broken by falling against rock drill at face of breast.
31	Thomas Shakolanski, ..	Polish, ....	Miner, .....	27	S.	Heidelberg No. 1, ....		Leg broken by fall of top coal at face of breast.
	Felix Yablonski, .....	Polish, ....	Laborer, .....	21	S.	Number 6, .....		Legs broken by being caught by plane rope while walking on plank.
	Michael Bernisky, ...	Lithuanian, ..	Miner, .....	47	M.	Number 6, .....		Leg broken by being caught by car while opening door on gangway.
Feb. 1	John Machun, .....	Polish, ....	Laborer, .....	19	S.	Lafin, .....		Pelvis fractured by being struck by cars on passing branch.
6	George Petroskolis, ..	Lithuanian, ..	Miner, .....	43	M.	Butler, .....		Leg broken by fall of fire clay at face of breast.
7	Harry Lewis, .....	American, ..	Laborer, .....	25	M.	Pine Ridge, .....	Luzerne,	Leg broken by cars on gangway road while riding between them.
13	Joseph Earley, .....	American, ..	Runner, .....	29	S.	Number 6, .....		Angle broken by car while putting it on track on gangway.
14	Stephen Ilchester, ...	Polish, ....	Company man, ..	28	S.	Butler, .....		Leg broken.
	Andrew Leack, .....	Polish, ....	Company man, ..	27	S.	Butler, .....		Arm broken by falling down pitching.
20	John Witkowski, .....	Polish, ....	Laborer, .....	42	M.	Pine Ridge, .....		Body hit and bruised by being thrown by mule while going to work outside.
23	Edward Wrista, .....	Slavonian, ..	Runner, .....	21	S.	Lafin, .....		Leg broken by car on breast road. Coupling broke and car ran back on him.
	Stephen Morofchuck, ..	Polish, ....	Runner, .....	23	S.	Pine Ridge, .....		Leg broken by cars while riding between them on gangway.
March 8	Joseph Mangan, .....	Irish, ....	Driver, .....	19	S.	Ewen, .....		Leg broken by being caught by slope rope while crossing it.
9	Frank Shensky, .....	Polish, ....	Footman, .....	26	S.	Heidelberg No. 1, .....		Kneecap broken by being caught between car bumpers, on gangway.
19	James Flaherty, .....	Irish, ....	Driver, .....	17	S.	Pine Ridge, .....		

March 20	Timothy Bedford, ....	American, ..	Miner, .....	38	S.	Number 9, .....	Ribs broken by fall of rock in face of gangway. The miner working with him was killed by the fall.
26	Harry Mirowski, ....	Russian, ....	Miner, .....	35	M.	Pine Ridge, .....	Head cut by flying coal from a premature blast that he was firing.
27	Frank Burack, .....	Polish, ....	Miner, .....	43	M.	Pine Ridge, .....	Foot crushed by fall of rock at face of breast.
May 24	Michael Bulzare, ....	Russian, ....	Pumpman, .....	30	M.	Butler, .....	Jaw fractured while repairing pump on truck outside the locomotive branched a car, which struck the truck and knocked Bulzare against pump.
27	Raymond Polinke, ...	Lithuanian, ..	Driver, .....	17	S.	Delaware, .....	Leg broken by being caught between car bumpers on gangway.
June 4	John Taylor, .....	Irish, .....	Miner, .....	31	S.	Heidelberg No. 1, .....	Face and head cut by flying rock from a rock hole that he was firing.
17	Patrick Healey, ....	Irish, .....	Miner, .....	56	M.	Mineral Spring, .....	Head cut and bruised by rock falling on him at face of breast.
17	Robert Frey, .....	American, ..	Runner, .....	35	S.	Ewen, .....	Skull fractured by being caught between cars on gangway.
18	Charles Ross, .....	Italian, ....	Miner, .....	42	M.	Lafin, .....	Face and hands cut by coal from blast that he was firing.
July 1	Frank Brotski, ....	Polish, ....	Miner, .....	23	S.	Pine Ridge, .....	Face and hands burned by gas which he ignited in old workings.
9	Joseph Trelah, ....	Polish, ....	Driver, .....	18	S.	Pine Ridge, .....	Leg bruised by being caught between car and coal at end of road.
17	August Pradel, ....	American, ..	Driver, .....	17	S.	Ewen, .....	Leg broken by being caught between car and door frame on gangway.
19	Michael Bukstano, ...	Polish, ....	Laborer, .....	26	S.	Number 6, .....	Arm cut by flying coal from a premature blast.
19	Charles Shusda, ....	Polish, ....	Miner, .....	52	M.	Number 6, .....	Arm broken by fall of top coal at face of breast.
30	Stephen Mirrick, ....	Slavonian, ..	Doorboy, .....	17	S.	Butler, .....	Leg broken by being struck by car that jumped track on gangway road.
Aug. 2	William McCue, ....	American, ..	Runner, .....	20	S.	Delaware, .....	Leg broken by cars while riding between them on gangway road.
13	Adam Hodaski, ....	Polish, ....	Miner, .....	55	M.	Heidelberg No. 1, .....	Ribs broken and arm cut by car running into wheel of breast.
31	James Mangan, ....	American, ..	Lineman, .....	22	S.	Butler, .....	Leg broken by being caught between motor and truck on gangway road.
Sept. 13	John Shunkanski, ...	Polish, ....	Miner, .....	53	M.	Number 6, .....	Ribs broken by flying coal from a blast that he was firing.
16	James Lawler, .....	American, ..	Headman, .....	28	S.	Pine Ridge, .....	Foot crushed by being caught between car bumpers at head of shaft.
23	Joseph Ochaniss, ....	Polish, ....	Miner, .....	45	M.	Number 14, .....	Ribs broken by premature blast that he was firing.
25	Michael Callaban, ...	American, ..	Miner, .....	41	M.	Number 9, .....	Collar bone broken by drill falling on him while barring down coal at face of breast.
Oct. 19	John Dameron, ....	Italian, ....	Laborer, .....	40	M.	Number 14, .....	Leg broken by fall of rock at face of breast.
22	Mark Carmiele, ....	Italian, ....	Miner, .....	42	S.	Butler, .....	Back bruised and ribs broken by premature blast. He cut his match.
22	Frank Ferrante, ....	Italian, ....	Engineer, .....	24	S.	Barnum, .....	Abdomen crushed. His clothing was caught while oiling conveyor. Outside.

Luzerne,



TABLE 5—Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Oct. 26	{ Lawrence Pendish, Joseph Pendish, .... Felix Bernuskie, .... William Rasavage, . }	{ Polish, .... Polish, .... Polish, .... Polish, .... }	{ Miner, .... Miner, .... Laborer, .... Laborer, .... }	{ 28 26 23 24 }	{ M. S. S. S. }	Latlin, .....		Burned about the face and hands by an explosion of gas while driving an opening through to an upper gangway for ventilation. They fired a blast, which cut a finger of gas, and they ignited the gas in going back to face.
28	John Mokosjock, ....	Slavonian, .....	Driver, .....	26	S.	Barnum, .....		Leg broken by fall of rock while waiting at face of breast for car to be loaded.
Nov. 25	{ John McNulty, .... Patrick Flannery, .... Peter Ginkesky, .... Alex Duluth, .... }	{ American, .... American, .... Polish, .... Polish, .... }	{ Mine boss, .... Miner, .... Laborer, .... Laborer, .... }	{ 36 43 35 27 }	{ M. M. S. S. }	{ Barnum, .... Barnum, .... }		{ Chin and hand cut. Head cut and body bruised. Jaw cut and body bruised. Standing traps and cogs in Marcy vein, which had been robbed, to secure the gangway when a cave-in took place. They were injured by the concussion when the roof came down.
Dec. 4	Joseph O'Donnell, ...	American, ..	Footman, .....	29	S.	Number 9, .....	Luzerne,	Arm badly cut and broken by being struck by coal that fell down the shaft.
7	Chuck Oresta, .....	Italian, ....	Miner, .....	28	S.	Butler, .....		Leg broken by fall of rock at face of breast.
11	{ William Simonson, Chas. Worzkelewacz, }	{ American, .. Polish, .... }	{ Driver, .... Chargeman, .... }	{ 17 34 }	{ S. M. }	{ Latlin, .... Latlin, .... }		{ Face and hands slightly burned by gas at face of breast. Face and hands slightly burned by gas at face of breast.
13	Stanislaus Nowak, .	American, ..	Driver, .....	18	S.			Face and hands burned by gas at face of breast.
19	John Toleneskie, ....	Polish, ....	Miner, .....	34	M.	Heidelberg No. 1, .....		Back slightly bruised by fall of rock at face of breast.
20	John Brill, .....	Polish, ....	Laborer, ....	45	S.	Barnum, .....		Ankle broken by rock sliding off gob at face of breast.
20	Albert Yaskolski, ....	Polish, ....	Miner, .....	50	M.	Number 9, .....		Leg broken by fall of rider coal at face of breast.
23	Romdo Solure, .....	Italian, ....	Miner, .....	34	M.	Mineral Spring, .....		Back broken by fall of rock at face of breast.

### Accident at Pine Ridge Colliery

November 9, at Pine Ridge Colliery of Hudson Coal Company, James Matthews, Stephen Zezuita, and Andrew Skoldo, lost their lives by an explosion of free hydrogen gas on the culm bank, outside. These men were employed on the night shift in flushing culm from the bank into a conveyor line, which was taken to a crusher at the washery and crushed and flushed down a bore hole into the abandoned workings in the mine. At 4.00 a. m. while they were directing a stream of water from a hose they were using, the water came in contact with a body of fire in the bank, and caused an explosion. Hot cinders and dust were thrown around them and the atmosphere was filled with a poisonous vapor. Zezuita died in a few minutes after being taken to fresh air. Matthews and Skoldo died the same day.

The death of the above men was caused by the poisoned atmosphere they had inhaled; their bodies were not burned.

### CONDITION OF COLLIERIES

#### PENNSYLVANIA COAL COMPANY

Barnum No. 9, Ewen, Numbers 6 and 14 Collieries.—Ventilation, drainage and condition as to safety, good.

#### HUDSON COAL COMPANY

Pine Ridge and Laffin Collieries.—Ventilation, drainage and condition as to safety, good.

#### HILLSIDE COAL AND IRON COMPANY

Butler Colliery.—Ventilation, drainage and condition as to safety, good.

#### LEHIGH VALLEY COAL COMPANY

Mineral Spring and Heidelberg No. 1 Collieries.—Ventilation and drainage fair, and condition as to safety, good.

#### DELAWARE AND HUDSON COMPANY

Delaware Colliery.—Ventilation, drainage and condition as to safety, good.

#### TRADERS COAL COMPANY

Ridgewood Colliery.—Ventilation fair. Drainage and condition as to safety, good.

#### YOST MINING COMPANY

Yost Colliery.—Ventilation fair. Drainage and condition as to safety, good.

## WILKES-BARRE COLLIERY COMPANY

Madeira Colliery.—Ventilation and drainage fair. Condition as to safety, good.

## McCAULEY COAL COMPANY

Pickaway Colliery.—Ventilation and drainage fair. Condition as to safety, good.

The roads inside of the mines of the Pennsylvania Coal Company and Hillside Coal and Iron Company are kept in first class condition. The gangways are kept free from refuse and standing water, and are of ample width. The passing branches at the foot of most of the shafts are concreted on both sides from bottom to roof, the roof is supported by steel girders and the foot or landings are lighted by electric lights.

## IMPROVEMENTS

## PENNSYLVANIA COAL COMPANY

Barnum Colliery.—A slush pump 24 by 10 by 36 inches has been installed for pumping slush to the top of the hill, southeast of No. 2 shaft. No. 3 shaft has been abandoned as a hoisting shaft, all coal being taken by motor to No. 2 shaft, Pittston vein landing.

Number 9 Colliery.—No. 3 shaft, on Broad street, Pittston, has been sunk to the Red Ash vein, to be used as a second opening and for ventilation; size of shaft 10 by 20 feet.

Curtis slope has been sunk from the surface to the Checker vein, 7 by 12 by 350 feet long. An electric hoist has been installed outside to hoist the coal from this opening. This is enclosed with a fireproof building, 14 by 18 by 12 feet.

At Leadville shaft the Clark vein has been opened through old No. 9 shaft, the coal being dropped to the Red Ash vein and hoisted up the Leadville shaft.

Number 6 Colliery.—A pair of 10 by 24 inch engines was installed outside in a fireproof building 17 by 32 feet, for hoisting the coal from the New Diamond slope. An air shaft 12 by 12 feet was sunk from the surface to the Marcy vein, a distance of 360 feet, for the purpose of ventilating the Diamond, Babylon and Red Ash veins.

In No. 6 shaft a tunnel was driven 7 by 12 by 200 feet long, for the purpose of recovering the Hillman vein pillars.

In No. 5 shaft two shafts, 10 by 10 by 30 feet deep, were sunk from the top to the bottom split of the Checker vein.

In No. 11 shaft a pair of 16 by 24 inch engines were installed to operate the tail rope haulage in the Babylon vein.

Ewen Colliery.—At No. 4 shaft a pair of 15 by 36 inch engines was installed in a brick building 27 by 40 feet, for the purpose of operating the rope haulage in the Red Ash vein.

In Hoyt shaft a fireproof mule barn was erected in the Red Ash vein, to accommodate 24 mules. An air shaft, 10 by 10 by 70 feet, was sunk from the Pittston to the Marcy vein, for ventilation.

In No. 4 shaft a rock tunnel 7 by 12 by 300 feet, was driven in the Red Ash vein, for transportation. A new rope haulage was installed

in the Red Ash vein, 3,000 feet. A fireproof mule barn to hold 17 mules was built in Red Ash vein, and one was also built in Marcy vein.

Number 14 Colliery.—A new fireproof mule barn 87 by 114 feet, was built on the outside at the tunnels, to accommodate 54 mules.

At the Courtright slope, a brick building 10 by 12 feet was erected outside for the use of blacksmith.

Two new shafts, one 12 feet by 16 feet 5 inches by 608 feet, and one 12 feet by 22 feet by 585 feet, were sunk from the surface to the Red Ash vein, for the purpose of working the veins below the Marcy.

A rock tunnel 7 feet by 12 feet by 250 feet was driven through the anticlinal in the Pittston vein for transportation.

A fireproof mule barn, to accommodate 45 mules, was built in the Checker vein.

#### HUDSON COAL COMPANY

Pine Ridge Colliery.—A rock slope was sunk from the Cooper to Red Ash vein, a distance of 900 feet, size 7 feet by 14 feet. The second opening was driven to the Laurel Run workings, a distance of 1,700 feet.

#### HILLSIDE COAL AND IRON COMPANY

Butler Colliery.—Built a new washery, pockets of concrete and the balance of yellow pine, size 110 feet by 65 feet by 90 feet high. Washery is equipped with the latest machinery to prepare coal.

One-half battery 150 H. P. of B. and W. dutch oven type boilers added to the boiler plant.

One brick wash-house, 18 by 42 by 11 feet erected for the firemen, breaker and washery employes.

Thomas shaft. A rock tunnel 7 by 12 by 540 feet, was driven through the anticlinal for haulage road in the Red Ash vein.

A rock slope 7 by 12 feet is being driven from the Red Ash vein to the Butler workings through the fault, to be used as a second opening for the Butler slope Red Ash vein.

Butler Marcy slope. The Pittston water tunnel has been extended to the Marcy vein.

Fernwood slope. A new mule barn of wood has been erected outside to accommodate 20 mules; size 20 by 120 by 12 feet. A new building of corrugated iron was erected for supplies; size 32 by 112 by 12 feet.

#### LEHIGH VALLEY COAL COMPANY

Mineral Spring Colliery.—Safety over-hoists were placed on the shaft engines. Two powder cars were built for the transportation of powder to Coal Brook tunnel. Two closed passenger cars were constructed for the transportation of men to and from Coal Brook.

A new loading belt was installed in the breaker.

The mule barn in the Red Ash vein was made fireproof. A new concrete hospital was built in the first lift off the Baltimore slope.

The props and timber in No. 39 tunnel for a distance of 60 feet were replaced by concrete and steel beams.

## DELAWARE AND HUDSON COMPANY

Delaware Colliery.—A new shaft 12 by 36 feet was sunk from the surface to the Red Ash vein, a distance of 490 feet. A 10-inch concrete lining was built between the airway and pumpway from bottom to top of shaft. A Guibal fan 20 feet in diameter was installed on the upcast shaft. A pair of hoisting engines, 26 by 48 inches, was installed at head of shaft. A return airway was driven from No. 7 slope in the third vein to new shaft, a distance of 500 feet.



## SEVENTH DISTRICT

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LUZERNE COUNTY

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Wilkes-Barre, Pa., February 20, 1913.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor of transmitting herewith the Annual Report of the Seventh Anthracite District for the year ending December 31, 1912.

Respectfully submitted,

THOMAS J. WILLIAMS, Inspector.

## SUMMARY OF STATISTICS

Number of collieries, .....	14
Number of mines, .....	48
Number of mines in operation, .....	48
Number of tons of coal shipped to market, .....	4,560,118
Number of tons used at mines for steam and heat, .....	527,365
Number of tons sold to local trade and used by employes, .....	263,564
Number of tons produced, .....	5,351,047
Number of tons produced by compressed air machines, ..	.....
Number of tons produced by electrical machines, .....	.....
Number of persons employed inside of mines, .....	8,506
Number of persons employed outside, .....	2,396
Number of fatal accidents inside of mines, .....	49
Number of fatal accidents outside, .....	1
Number of non-fatal accidents inside of mines, .....	68
Number of non-fatal accidents outside, .....	7
Number of tons of coal produced per fatal accident inside, .....	109,205
Number of tons produced per fatal accident outside, ....	5,351,047
Number of tons produced per fatal accident inside and outside, .....	107,021
Number of persons employed per fatal accident inside, ..	174
Number of persons employed per fatal accident outside, ..	2,396
Number of persons employed per fatal accident inside and outside, .....	218
Number of persons employed per non-fatal accident inside, .....	125
Number of persons employed per non-fatal accident outside, .....	342
Number of persons employed per non-fatal accident inside and outside, .....	145
Number of wives made widows, .....	30
Number of children made orphans, .....	82
Number of steam locomotives used inside of mines, .....	.....
Number of steam locomotives used outside, .....	29
Number of compressed air locomotives used inside, .....	14
Number of compressed air locomotives used outside, ....	.....
Number of electric motors used inside, .....	18
Number of electric motors used outside, .....	.....
Number of fans in use, .....	48
Number of furnaces in use, .....	.....
Number of gaseous mines in operation, .....	45
Number of non-gaseous mines in operation, .....	3
Number of new mines opened, .....	.....
Number of old mines abandoned, .....	.....

## TABLE A

## PRODUCTION OF COAL

Names of Operators	Tons
Lehigh and Wilkes-Barre Coal Company, .....	2,552,392
Lehigh Valley Coal Company, .....	1,793,250
Delaware and Hudson Company, .....	569,969
Red Ash Coal Company, .....	244,823
Wilkes-Barre Anthracite Coal Company, .....	98,982
Rissinger Brothers and Company, Incorporated, .....	63,799
Pittston Coal Mining Company, .....	27,832
Total, .....	<u>5,351,047</u>

## Production by Counties

Luzerne, .....	<u>5,351,047</u>
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TABLE B—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside		Tons of coal produced per non-fatal accident inside		Number of employees inside		Number of employees outside		Total number of employees		Number of employees inside per fatal accident		Number of employees outside per fatal accident		Number of employees inside per non-fatal accident		Number of employees outside per non-fatal accident	
	Inside	Outside	Total	Inside	Outside	Total																		
Ledigh and Wilkes-Barre Coal Co.,	27	.....	27	33	4	37	91,533	77,845	4,164	883	5,047	154	.....	.....	5,047	154	.....	.....	.....	.....	126	221	.....	.....
Ledigh Valley Coal Co.,	14	.....	14	24	.....	24	128,089	71,718	2,517	618	3,125	180	.....	.....	3,125	180	.....	.....	.....	.....	103	173	.....	.....
Delaware and Hudson Co.,	7	.....	7	6	.....	6	81,424	94,995	915	411	1,336	121	.....	.....	1,336	121	.....	.....	.....	.....	153	206	.....	.....
Red Ash Coal Co.,	1	.....	1	4	.....	4	244,823	61,206	347	306	.....	317	.....	.....	.....	317	.....	.....	.....	.....	87	.....	.....	
Pittston Coal Mining Co.,	.....	.....	.....	1	.....	1	.....	27,832	124	71	175	.....	.....	.....	.....	.....	.....	.....	.....	.....	124	51	.....	.....
Miscellaneous Companies,	.....	.....	.....	.....	.....	.....	.....	.....	439	127	566	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals and averages for district,	49	1	50	68	7	75	109,295	78,692	8,506	2,396	10,502	174	.....	2,396	10,502	174	.....	2,396	.....	.....	125	.....	312	.....

TABLE C.—Classification of Fatal Accidents Inside and Outside of Mines

	Months												Totals	Percentages
	January	February	March	April	May	June	July	August	September	October	November	December		
<b>Causes of Accidents Inside</b>														
Falls of coal, .....	...	...	2	...	...	1	1	...	1	...	1	...	7	14.29
Falls of slate, .....	...	...	...	...	...	...	1	...	...	1	...	...	4	8.17
Falls of roof, .....	...	...	1	...	...	...	...	1	...	...	...	...	4	8.16
Mine cars, .....	1	...	...	...	...	1	...	4	...	3	1	...	12	24.49
Explosions of gas, ....	4	...	...	...	1	...	4	1	...	...	...	...	12	24.49
Explosions of powder and dynamite, .....	...	...	...	...	...	...	1	...	...	...	1	...	2	4.08
Blasts, premature and otherwise, .....	1	...	...	...	...	1	...	1	...	...	1	...	4	8.16
Struck by a rope, ....	1	...	...	...	...	...	...	...	...	...	...	...	1	2.04
Struck by piece of coal falling down shaft, ...	...	...	...	...	...	...	1	...	...	...	...	...	1	2.04
Explosions of oil, ....	...	...	...	...	...	...	...	...	...	...	1	...	1	2.04
Struck by drill, ....	...	...	...	...	...	...	...	...	...	...	...	1	1	2.04
<b>Totals, .....</b>	<b>7</b>	<b>6</b>	<b>3</b>	<b>...</b>	<b>1</b>	<b>3</b>	<b>8</b>	<b>9</b>	<b>1</b>	<b>5</b>	<b>5</b>	<b>1</b>	<b>49</b>	<b>100.00</b>
<b>Causes of Accidents Outside</b>														
Struck by rope, .....	1	...	...	...	...	...	...	...	...	...	...	...	1	100.00
<b>Totals, .....</b>	<b>1</b>	<b>...</b>	<b>...</b>	<b>...</b>	<b>...</b>	<b>...</b>	<b>...</b>	<b>...</b>	<b>...</b>	<b>...</b>	<b>...</b>	<b>...</b>	<b>1</b>	<b>100.00</b>
<b>Grand totals inside and outside, .....</b>	<b>8</b>	<b>6</b>	<b>3</b>	<b>...</b>	<b>1</b>	<b>3</b>	<b>8</b>	<b>9</b>	<b>1</b>	<b>5</b>	<b>5</b>	<b>1</b>	<b>50</b>	<b>.....</b>

TABLE D.—Classification of Non-Fatal Accidents Inside and Outside of Mines

	Months												Totals	Percentages
	January	February	March	April	May	June	July	August	September	October	November	December		
<b>Causes of Accidents Inside</b>														
Falls of coal, .....	1	...	4	...	1	...	1	2	2	2	1	1	15	22.06
Falls of slate, .....	...	1	...	...	...	...	...	2	...	...	1	2	4	5.88
Falls of roof, .....	...	...	...	...	...	1	1	2	...	1	...	...	3	11.77
Mine cars, .....	3	...	...	...	1	...	2	4	...	1	3	3	21	30.83
Explosions of gas, ....	...	...	...	...	1	...	...	1	...	...	...	1	6	8.83
Explosions of powder and dynamite, .....	...	...	...	...	...	1	1	...	...	...	...	...	2	2.94
Blasts, premature and otherwise, .....	...	1	1	...	...	...	...	...	3	2	...	...	7	10.29
Mules, .....	...	...	...	...	...	...	...	...	...	...	1	...	1	1.47
Struck by a rope, ....	1	...	...	...	...	...	...	...	...	...	...	...	1	1.47
Struck by a lever, ....	1	...	...	...	...	...	...	...	...	...	...	...	1	1.47
By falling, .....	...	...	...	...	...	1	...	...	...	...	...	1	2	2.94
<b>Totals, .....</b>	<b>6</b>	<b>4</b>	<b>13</b>	<b>...</b>	<b>4</b>	<b>3</b>	<b>4</b>	<b>12</b>	<b>4</b>	<b>4</b>	<b>6</b>	<b>8</b>	<b>68</b>	<b>100.00</b>
<b>Causes of Accidents Outside</b>														
Cars, .....	...	...	...	...	...	...	...	1	...	...	...	...	1	14.29
Machinery, .....	...	...	...	...	...	...	...	...	1	...	...	1	2	28.57
Struck by a lever, ...	...	1	...	...	...	...	...	...	...	...	...	...	1	14.29
Struck by a rope, ....	...	...	...	...	...	...	...	...	...	1	...	...	1	14.29
Struck by timber, ....	...	...	...	...	...	...	...	...	...	...	1	...	1	14.28
By falling, .....	...	...	...	...	...	...	...	...	...	...	...	1	1	14.28
<b>Totals, .....</b>	<b>...</b>	<b>1</b>	<b>...</b>	<b>...</b>	<b>...</b>	<b>...</b>	<b>...</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>7</b>	<b>100.00</b>
<b>Grand totals inside and outside, .....</b>	<b>6</b>	<b>5</b>	<b>13</b>	<b>...</b>	<b>4</b>	<b>3</b>	<b>4</b>	<b>13</b>	<b>5</b>	<b>5</b>	<b>7</b>	<b>10</b>	<b>75</b>	<b>.....</b>



TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	Totals
<b>Inside</b>												
Fire bosses and assistants, ..	..	..	..	..	..	..	..	..	..	..	1	1
Miners, .....	4	1	3	..	1	..	..	4	..	..	..	26
Miners' laborers, .....	12	12	..	..	..	..	12	..	1	..	1	29
Drivers and runners, .....	..	1	..	..	..	..	..	12	..	..	..	5
Headmen, .....	1	..	..	..	..	..	..	..	..	..	..	1
Pumpmen, .....	..	1	..	..	..	..	..	..	..	..	..	1
Trackmen, .....	..	1	..	..	..	..	..	..	..	..	..	1
Pipemen, .....	..	..	..	..	..	1	..	..	..	..	..	1
Slatemen, .....	..	..	..	..	..	..	..	1	..	1	..	2
Footmen, .....	..	..	..	..	..	..	1	1	..	..	..	2
Totals, .....	7	6	3	..	1	3	8	9	1	5	5	49
<b>Outside</b>												
Headmen, .....	1	..	..	..	..	..	..	..	..	..	..	1
Totals, .....	1	..	..	..	..	..	..	..	..	..	..	1
Grand totals inside and outside, .....	8	6	3	..	1	3	8	9	1	5	5	50

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	Totals
<b>Inside</b>												
Mine foremen, .....	1	..	..	..	..	..	..	..	..	..	..	1
Fire bosses and assistants, ..	..	..	..	..	..	..	..	..	..	..	1	1
Miners, .....	12	12	..	..	..	..	..	12	..	..	4	33
Miners' laborers, .....	..	..	..	..	..	1	..	..	..	..	1	12
Drivers and runners, .....	..	1	..	..	..	..	1	..	1	1	..	13
Doorboys and helpers, .....	1	..	1	..	1	..	..	..	..	1	..	5
Carpenters, .....	..	1	..	..	..	..	..	..	..	..	..	1
Timbermen, .....	..	..	..	..	..	..	1	..	..	..	..	1
Trackmen, .....	..	..	..	..	..	..	..	..	..	..	1	1
Totals, .....	6	4	12	..	1	3	4	12	4	4	6	68
<b>Outside</b>												
Chute bosses, .....	..	..	..	..	..	..	..	..	1	..	..	1
Engineers and firemen, .....	..	1	..	..	..	..	..	..	..	1	..	3
Slaters, .....	..	..	..	..	..	..	..	1	..	..	..	1
Carpenters, .....	..	..	..	..	..	..	..	..	..	1	..	1
Drivers, .....	..	..	..	..	..	..	..	..	..	..	1	1
Totals, .....	..	1	..	..	..	..	..	1	1	1	1	7
Grand totals inside and outside, .....	6	5	13	..	1	3	4	13	5	5	7	75

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months											Totals	
	January	February	March	April	May	June	July	August	September	October	November		December
American, .....	1	1	.....	.....	.....	.....	1	4	.....	2	1	.....	10
English, .....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1
Welsh, .....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Irish, .....	1	1	.....	.....	.....	.....	.....	.....	.....	1	1	.....	4
German, .....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	3
Polish, .....	4	2	1	.....	.....	1	4	1	1	2	2	1	19
Italian, .....	.....	.....	.....	.....	1	.....	1	.....	.....	.....	.....	.....	2
Slavonian, .....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	2
Lithuanian, .....	.....	.....	1	.....	.....	1	.....	.....	.....	.....	1	.....	3
Austrian, .....	1	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	2
Russian, .....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	2
Bohemian, .....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Totals. ....	8	6	3	...	1	3	8	9	1	5	5	1	50

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months											Totals	
	January	February	March	April	May	June	July	August	September	October	November		December
American, .....	2	2	4	...	2	...	...	1	2	1	1	4	19
English, .....	...	1	...	...	...	...	...	1	...	...	1	1	3
Welsh, .....	...	...	1	...	...	...	1	2	...	1	1	...	6
Irish, .....	...	...	...	...	...	...	...	...	...	...	1	...	1
German, .....	...	...	...	...	...	...	...	1	...	...	...	1	2
Polish, .....	3	2	3	...	1	2	3	5	...	1	2	1	23
Hungarian, .....	...	...	...	...	...	...	...	...	...	1	...	...	1
Italian, .....	1	...	...	...	...	...	...	1	1	...	...	...	2
Slavonian, .....	...	...	1	...	...	1	...	1	...	1	...	...	4
Lithuanian, .....	...	...	3	...	1	...	...	1	2	...	2	3	12
Russian, .....	...	...	1	...	...	...	...	1	...	...	...	...	2
Totals, .....	6	5	13	....	4	2	4	13	5	5	7	10	75

TABLE I.—Operators and mines, kind of openings, type and size of fans, size of furnaces, volume of air produced by fan or furnace per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	Kind of opening	Gaseous or non-gaseous	Method of ventilation	Diameter of fan in feet and inches	Width of blades in feet and inches	Depth of blades in feet and inches	Number of revolutions per minute	Water gauge developed—in inches	Name of fan	Power used	Number of splits of air currents	Number of cubic feet of air per minute entering the mine at inlet	Total number of cubic feet of air per minute circulating in all the splits	Number of cubic feet of air per minute passing out at outlet	Number of persons employed inside
Lehigh and Wilkes-Barre Coal Co.															
Stanton No. 7 Colliery:															
Empire No. 2,	Slope, .....	Gaseous, ..	Fan, .....	24	8,	6.0	60	1.5	{ Guibal, ...	Steam, .....	23	404,560	375,720	436,460	769
Stanton No. 3,	Shaft, .....	Gaseous, ..	Fan, .....	35	11.7	8.4	45	1.5	{ Guibal, ...	Steam, .....	10	114,700	106,200	118,900	208
Empire No. 4,	Shaft, .....	Gaseous, ..	Fan, .....	34.5	11.9	8.9	45	1.5	{ Guibal, ...	Steam, .....					
Maxwell No. 20 Colliery:															
Maxwell No. 1,	Slope, .....	Gaseous, ..	Fan, .....	25	8.2	6.3	72	1.4	{ Guibal, ...	Steam, .....	28	461,614	425,750	499,630	740
Maxwell No. 2,	Shaft, .....	Gaseous, ..	Fan, .....	24	8,	6,	72	1.4	{ Guibal, ...	Steam, .....					
Maxwell No. 3,	Shaft, .....	Gaseous, ..	Fan, .....	35	11.9	8.9	44	1.9	{ Guibal, ...	Steam, .....					
Maxwell No. 4,	Shaft, .....	Gaseous, ..	Fan, .....	35	11.9	8.9	44	1.9	{ Guibal, ...	Steam, .....					
South Wilkes-Barre No. 5 Colliery:															
South Wilkes-Barre No. 1,	{ Shaft, ..	Gaseous, ..	Fans, ...	35	11.9	8.9	45	1.5	{ Guibal, ...	Steam, .....	40	477,795	400,065	509,540	717
South Wilkes-Barre No. 2,				35	11.9	8.9	45	1.5							
South Wilkes-Barre No. 3,				35	11.9	8.9	45	1.9							
South Wilkes-Barre No. 4,				35	11.9	8.9	45	1.9							
Hollenback No. 2 Colliery:															
Hollenback No. 1,	Shaft, .....	Gaseous, ..	Fan, .....	35	11.6	8.9	45	1.4	{ Guibal, ...	Steam, .....	19	334,680	291,010	407,010	565
Hollenback No. 2,	Slope, .....	Gaseous, ..	Fan, .....	24	7.11	6,	60	1.4							
Hollenback No. 3,	Slope, .....	Gaseous, ..	Fan, .....	35	11.9	8.9	45	1.7							
Hollenback No. 4,	Shaft, .....	Gaseous, ..	Fan, .....	3	11.9	8.9	45	1.7							

Sugar Notch No. 9 Colliery: Sugar Notch No. 1, Sugar Notch No. 2, Prospect Colliery: Ledge Valley Coal Co.	Tunnel, ... Shaft, ...	Gaseous, .. Gaseous, ..	Fan, ..... Fan, .....	20 24	6.8 8.	5. 6.	70 56	1.1 1.1	Guibal, ...	Steam, .....	14	374,460	319,803	469,584	508
Prospect No. 1, Prospect No. 2, Oakwood, Midvale, Henry, Five Foot, Baltimore, Red Ash, Hillman, Wyoming Five Foot, Warrior Run, Hillman,	Shaft, ... Shaft, ... Shaft, ... Slope, ... Slope, ... Slope, ... Slope, ... Slope, ... Slope, ... Slope, ... Slope, ... Slope, ...	Gaseous, .. Gaseous, .. Gaseous, .. Gaseous, .. Gaseous, .. Gaseous, .. Gaseous, .. Gaseous, .. Gaseous, .. Gaseous, .. Gaseous, .. Gaseous, ..	{ Fan, * Fan, ... Fan, ... Fan, ... Fan, ... Fan, ... Fan, ... Fan, ... Fan, ... Fan, ... Fan, ... Fan, ...	25 30 30 30 30 28 25 28 29 20 14	8.2 9. 9. 6.6 5.3 6.6 7. 6.6 6. 6. 6. 4.	6.3 9. 5. 8. 8. 7.6 6. 7.6 5.9 5. 4. 4.	80 52 52 52 52 46 50 52 60 60 75 75	1.7 1.7 1.1 1.2 2.7 1.6 1.1 1.4 1.9 1.2 1.2	{ Guibal, ... Steam, .....	{ 7 6 8 6 4 9 6 6 6 6 2	145,691 136,003 141,093 106,970 106,831 115,890 73,005 103,247 133,734 64,631 95,826 28,390	150,213 157,131 160,950 115,890 87,126 103,247 183,853 93,493 159,348 18,700	175 283 100 148 60 213 145 104 104 104		
Dorrence Colliery: Baltimore, Hillman,	Shaft, ... Shaft, ...	Gaseous, .. Gaseous, ..	{ Fan, ... Fan, ...	28 35 30	8. 12 10.	8. 10.2 8.	67 40 54	1.7 1.9 1.9	{ Guibal, ... Guibal, ...	Steam, .....	10 8	212,569 145,497	171,561 106,130	245,427 171,630	{ 614
Franklin Colliery: Rock Slope, Long Slope, No. 4 Tunnel, Sump Slope (Baltimore),	Slope, ... Slope, ... Drift, ... Slope, ...	Gaseous, .. Non-gas., .. Non-gas., .. Gaseous, ..	Fan, ... Natural, ... { Fan, ... { Fan, ...	29 14 15 15	6. 6. 4.6 4.6	5.9 4. 4.6 4.6	80 80 80 80	1.2 .8 1.0 1.0	{ Guibal, ... Guibal, ... Guibal, ... Guibal, ...	Steam, .....	5 3 3 2	92,200 63,100 21,500 27,600	90,200 60,300 18,200 26,400	94,700 64,900 25,900 29,000	170 74 54 46
Delaware and Hudson Co. Baltimore No. 3 Colliery: Baltimore No. 2, Baltimore No. 5, Corryham Hillman, Corryham Baltimore,	{ Shaft, ... Shaft, ...	Gaseous, .. Gaseous, ..	{ Fans, ... Fans, ...	17.5 28 28 29 17	5.3 7. 7. 5.8 5.4	4.8 5.6 6.5 5.0 4.0	64 65 65 78 90	2.2 2.8 2.8 1.7 1.7	{ Guibal, ... Guibal, ... Guibal, ... Guibal, ...	Steam, .....	{ 4 5 3 4	126,385 192,665 85,770 102,820	109,895 168,650 80,640 91,350	141,975 207,130 89,430 125,960	160 213 88 23
Baltimore Tunnel Colliery: Baltimore Tunnel, Baltimore Shaft,	Tunnel, ... Shaft, ...	Gaseous, .. Gaseous, ..	Fan, ..... Fan, .....	18 8.	6. 3.	5. 2.2	52 75	1. 8.	{ Guibal, ... Guibal, ...	Steam, .....	3 4	97,310 21,200	78,820 18,430	116,550 23,120	128 81
Red Ash Coal Co. Red Ash No. 2 Colliery: Red Ash No. 1, Red Ash No. 2, Wilkes-Barre Anthracite Coal Co. Hillman Vein Colliery: Hillman,	Slope, ... Slope, ... Slope, ... Shaft, ...	Non-gas., .. Non-gas., .. Gaseous, .. Gaseous, ..	Fan, ..... Fan, .....	15 15 30	5 5 9.8	3.9 3.9 9.9	78 47 56	1.6 1.6 2.5	{ Vulcan, ... Vulcan, ... Tamaqua, ..	Steam, .....	3 3 3	50,000 43,700 108,000	40,000 39,355 80,000	58,000 46,250 120,000	221 126 349

\*Emergency fan.

TABLE I.—Continued

Names of Operators and Mines	Number of persons employed inside	57	42	124
	Number of cubic feet of air per minute passing out at outlet	29,300	35,900	45,500
	Total number of cubic feet of air per minute circulating in all the splits	29,000	31,300	35,500
	Number of cubic feet of air per minute entering the mine at inlet	29,000	31,300	41,000
Number of splits of air currents		1	2	6
Power used		Electricity,	Electricity,	Steam,.....
		Buffalo, ...	Buffalo, ...	Tamaqua, .
Name of fan				
Water gauge developed—in inches		1-	3-	1.5
Number of revolutions per minute		143	78	75
Depth of blades in feet and inches		1.6	2.6	5.6
Width of blades in feet and inches		2.4	2-	4.6
Diameter of fan in feet and inches		5.5	9-	17
Method of ventilation		Fan, .....	Fan, .....	Fan, .....
Gaseous or non-gaseous		Gaseous, ..	Gaseous, ..	Gaseous, ..
Kind of opening		Slope, .....	Slope, .....	Shaft, ....
Risinger Brothers and Co., Incorporated Miners, Mills, Cullery: No. 1 Slope, .....				
No. 2 Slope, .....				
Pittston Coal Mining Co. Hadleigh Cullery:				
Hadleigh, .....				



TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	Name of General Superintendent	Post Office	Name of Superintendent	Post Office	Railroad to Mine
Leligh and Wilkes-Barre Coal Co.						
Stanton No. 7, .....	{ Luzerne,..... }	C. F. Huber, .....	Wilkes-Barre, .....	E. J. Newbaker, ....	Wilkes-Barre, .....	C. R. R. of N. J.
Maxwell No. 50, .....						
South Wilkes-Barre No. 5, ..						
Hollenback No. 2, .....						
Sugar Notch No. 9, .....						
Empire Washery, .....						
Leligh Valley Coal Co.						
Prospect, .....	{ Luzerne,..... }	Thomas Thomas, ....	Wilkes-Barre, .....	J. H. Haertter, .....	Wilkes-Barre, .....	Leligh Valley
Dorrance, .....						
Franklin, .....						
Delaware and Hudson Co.						
Baltimore No. 5, .....	{ Luzerne,..... }	C. C. Rose, .....	Scranton, .....	E. R. Pettebone, ...	Dorrance, .....	D. and H.
Baltimore Tunnel, .....						
Baltimore Tunnel Washery, ..						
Corryham Washery, .....						
Red Ash Coal Co.						
Red Ash No. 2, .....	{ Luzerne,..... }	T. F. Minford, ....	Wilkes-Barre, .....	T. F. Minford, .....	Wilkes-Barre, .....	C. R. R. of N. J.
Red Ash Washery, .....						
Wilkes-Barre Anthracite Coal Co.						
Hillman Vein, .....	Luzerne,.....	Thomas H. Price, ..	Wilkes-Barre, .....	Thomas H. Price, ..	Wilkes-Barre, .....	Leligh Valley
Risinger Brothers and Co., Incorporated						
Miners' Mills, .....						
Pittston Coal Mining Co.						
Hadleigh, .....	Luzerne,.....	M. W. O'Boyle, ....	Pittston, .....	C. M. O'Boyle, .....	Kingston, .....	C. R. R. of N. J.

TABLE 2.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured, quantity of powder, dynamite and permissible explosives used, etc.

Names of Operators and Collieries	County	Number of employees	Number of fatal accidents	Number of non-fatal accidents	Explosives			Number of horses and mules
					Number of pounds of powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used	
Lohigh and Wilkes-Barre Coal Co. Stanton No. 1, Maxwell No. 20, South Wilkes-Barre No. 5, Hollenback No. 2, Sugar Notch No. 9,	Luzerne,	571,858 527,345 377,702 300,009 317,734	13,747 12,464 96,756 43,540 4,311	637,585 580,373 519,590 384,496 343,530	227 212 214 229 218	1,276 1,033 1,217 788 694	4 8 11 6 3	1,276 1,033 1,217 788 694
Empire Washery,	Luzerne,	2,094,618	170,818	2,465,574	226	5,006	37	2,094,618
Totals,		2,676,476	184,566	2,902,158	252	6,284	74	2,676,476
Lough Valley Coal Co. Prospect, Dorance, Franklin,	Luzerne,	928,668 306,878 291,100	6,436 48,225 5,868	1,029,187 400,920 393,143	227 229 225	1,862 747 526	6 3 4	1,862 747 526
Totals,		1,526,646	60,549	1,733,250	.....	3,135	15	1,526,646
Delaware and Hudson Co. Baltimore No. 7, Baltimore Tunnel,	Luzerne,	284,618 176,670 441,288	4,483 5,224 9,657	279,588 182,708 462,296	192 178 .....	926 400 1,326	5 2 7	279,588 182,708 462,296



TABLE 2.—Part 2

Names of Operators	County	Number of Boilers			Locomotives			Total horse power	Number of steam engines of all classes	Total horse power	Number of pumps delivering water to surface	Capacity in gallons per minute	Quantity delivered to surface per minute—gallons	Number of electric dynamos	Number of air compressors
		Cylindrical	Horse power	Tubular	Horse power	Total horse power	Steam	Air	Electric						
Lehigh and Wilkes-Barre Coal Co.,	Luzerne,	...	...	59	12,067	12,067	8	12	...	249	14	15,670	8,570	315	15
Lehigh Valley Coal Co.,		...	...	44	9,400	9,400	14	2	14	119	13	10,395	5,600	5	11
Delaware and Hudson Co.,		...	...	33	7,642	7,642	2	...	4	135	12	9,900	4,700	6	8
Red Ash Coal Co.,		21	567	...	900	900	5	...	...	20	4	3,217	1,554	...	...
Wilkes-Barre Anthracite Coal Co.,		...	...	8	1,200	1,200	...	...	...	6	3	1,735	1,600	1	1
Rissinger Brothers and Co., Incorporated,		...	...	4	...	...	...	...	...	2	...	750	...	...	...
Pittston Coal Mining Co.,		...	...	23	180	180	...	...	...	15	1	...	...	...	...
Totals,		21	567	147	31,422	31,989	29	14	18	536	47	40,657	21,631	14	30

TABLE 3.—Number of each class of employees inside and outside of mines

Names of Operators	County	Inside										Outside										Grand total inside and outside	
		Mine foremen	Assistant mine foremen	Fire bosses and assistants	Miners	Miners' laborers	Drivers and runners	Doorboys and helpers	Pumpmen	Company men	All other employees	Total inside	Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Slatepickers (boys)	Slatepickers (men)	Bookkeepers and clerks	All other employees	Total outside		
Lehigh and Wilkes-Barre Coal Co.,...	Luzerne,	6	8	55	1,586	987	416	231	21	664	190	4,164	....	6	33	115	176	29	21	473	883	5,047	
Lehigh Valley Coal Co.,		14	48	....	963	510	327	66	32	....	557	2,517	....	5	34	118	46	14	14	387	618	3,135	
Delaware and Hudson Co.,		4	2	11	238	332	103	3	17	181	24	915	....	4	21	82	34	46	6	218	411	1,326	
Red Ash Coal Co.,		2	....	1	129	123	35	6	4	47	....	347	1	5	19	27	7	45	3	199	306	653	
Wilkes-Barre Anthracite Coal Co.,		1	4	2	78	156	41	6	4	15	33	340	....	1	6	9	22	1	4	42	85	425	
Rissinger Brothers and Co., Incorporated,		2	1	1	32	29	13	1	....	8	12	99	1	1	2	4	12	5	1	16	42	141	
Pittston Coal Mining Co.,		1	....	1	60	39	11	1	2	9	....	124	1	1	4	7	12	....	1	25	51	175	
Totals,			20	63	71	3,086	2,176	946	314	80	924	816	8,506	3	23	119	332	309	140	50	1,360	2,396	10,902





TABLE 4.—Fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 5	Michael McGeavret, ..	American, ...	Headman, ...	38	M.	1	...	Franklin, .....	...	Fatally injured by being struck by rope outside.
8	Ignatz Knopinskie, ..	Polish, .....	Laborer, .....	28	S.	...	...	Baltimore No. 5, .....	...	Fatally burned by explosion of gas at face of breast.
10	William Kropinskie, ..	Polish, .....	Miner, .....	23	S.	...	...	Baltimore No. 5, .....	...	Killed by cars on slope.
13	Michael Rostin, .....	Polish, .....	Headman, .....	28	S.	...	...	Baltimore Tunnel, .....	...	Fatally injured by being struck by rope on slope.
25	Andrew Baback, .....	Austrian, ..	Laborer, .....	30	M.	1	...	...	...	Killed by premature blast at face of breast.
27	Robert McCadden, ...	Irish, .....	Miner, .....	65	M.	1	4	Hollenback No. 2, .....	...	Fatally burned by explosion o. gas at face of breast.
31	Joseph Ondakuski, ...	Slavonian, ..	Miner, .....	30	M.	1	2	Maxwell No. 20, .....	...	Fatally burned by explosion of gas at face of breast.
Feb. 3	Andrew Prymorvich, ..	Polish, .....	Miner, .....	38	M.	1	...	Maxwell No. 20, .....	...	Fatally burned by explosion of gas at face of breast.
17	Vincent Kustram, ....	German, .....	Trackman, ...	18	S.	...	...	Prospect, .....	...	Killed by cars on gangway.
17	Michael Riley, .....	American, ...	Driver, .....	20	S.	...	...	Sugar Notch No. 9, .....	...	Killed by cars on gangway.
24	Edward McDonald, ...	Irish, .....	Pumpman, ...	51	M.	1	2	Franklin, .....	Luzerne, ...	Killed by fall of roof in sump.
24	John G. Jones, .....	Welsh, .....	Miner, .....	50	M.	1	2	Hollenback No. 2, .....	...	Fatally burned by explosion of gas at face of breast.
25	Alex. Orloski, .....	Polish, .....	Laborer, .....	38	M.	1	...	...	...	Killed by fall of roof at face of gangway.
27	Steve Orloski, .....	Polish, .....	Laborer, .....	27	S.	...	...	Hollenback No. 2, .....	...	Killed by fall of coal at face of chamber.
March 7	Andrew Grzegewicz, ..	Lithuanian, ..	Miner, .....	53	M.	1	1	Franklin, .....	...	Killed by fall of coal on gangway.
14	John Mucholic, .....	Bohemian, ..	Miner, .....	41	M.	1	1	Maxwell No. 20, .....	...	Killed by fall of coal on gangway.
21	John Stanick, .....	Polish, .....	Miner, .....	26	M.	1	...	South Wilkes-Barre No. 5, .....	...	Killed by fall of roof at face of breast.
May 31	Mazzerlo Orclini, ....	Italian, .....	Miner, .....	22	S.	...	...	Prospect, .....	...	Killed by an explosion of gas at face of breast.
June 5	Louis Schuler, .....	German, .....	Pipeman, .....	60	M.	1	5	Hollenback No. 2, .....	...	Fatally injured by cars on gangway.
17	Frank Zageika, .....	Polish, .....	Miner, .....	34	M.	1	7	Prospect, .....	...	Killed by fall of coal at face of gangway.
19	John Mickus, .....	Lithuanian, ..	Miner, .....	22	S.	...	...	South Wilkes-Barre No. 5, .....	...	Fatally injured by premature blast at face of cross-cut.
July 3	Peter Delinsky, ....	Polish, .....	Miner, .....	52	M.	1	6	Sugar Notch No. 9, .....	...	Killed by fall of coal at face of breast.
6	Louis Balletto, .....	Italian, .....	Laborer, .....	28	S.	...	...	Prospect, .....	...	Fatally burned by explosion of powder in breast.
11	James Hayes, .....	American, ...	Footman, .....	31	M.	1	6	Dorranee, .....	...	Killed by being struck by piece of coal that fell down the shaft.

TABLE 4—Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
July 17	{ Stanley Wekart, ... { Peter Wekart, ... { Joseph Toth, ... { Frank Wroble, ...	Polish, ... Polish, ... German, ... Polish, ...	Miner, ... Laborer, ... Miner, ... Miner, ...	45 ... 18 ... 27 ... 27 ...	S. ... S. ... M. ... M. ...	... 1 ... ... 1 ...	... 3 ... ... 3 ...	South Wilkes Barre No. 5.		Stephen Wekart, Peter Wekart and Joseph Toth were instantly killed and Frank Wroble was fatally burned by an explosion of gas at face of breast. Wroble died July 20. Wroble fired a shot and ignited the gas that had accumulated in his chamber.
Aug. 23	Joseph Novick, ...	Austrian, ...	Miner, ...	31 ...	M. ...	1 ...	2 ...	Hollenback No. 2.		Killed by fall of slate at face of breast.
6	Walter J. Oliver, ...	English, ...	Miner, ...	46 ...	M. ...	1 ...	3 ...	Baltimore No. 5.		Killed by fall of slate at face of breast.
12	Silvester Zerenas, ...	Russian, ...	Miner, ...	30 ...	M. ...	1 ...	4 ...	Maxwell No. 20.		Killed by fall of slate at face of breast.
19	Michael Lesko, ...	Slavonian, ...	Laborer, ...	26 ...	S. ...	...	...	Dorrance, ...		Killed by fall of roof on gangway.
22	James Moran, ...	American, ...	Driver, ...	19 ...	S. ...	...	...	Prospect, ...		Killed by cars on slope.
23	Arthur Richards, ...	American, ...	Slateman, ...	18 ...	S. ...	...	...	Stanton No. 7, ...		Killed by cars on slope.
24	William E. Harding, ...	American, ...	Runner, ...	29 ...	M. ...	1 ...	4 ...	Prospect, ...		Killed by cars on slope.
29	Benjamin Andrews, ...	Polish, ...	Miner, ...	23 ...	M. ...	1 ...	2 ...	Maxwell No. 20.		Fatally burned by explosion of gas in breast.
30	Michael Dapla, ...	Russian, ...	Miner, ...	44 ...	M. ...	1 ...	4 ...	Baltimore No. 5.	Luzerne...	Killed by explosion of blast at cross-cut.
31	Daniel Reese, ...	American, ...	Footman, ...	36 ...	S. ...	...	...	Baltimore Tunnel.		Killed by cars on slope.
30	Anthony Scedloskie, ...	Polish, ...	Laborer, ...	36 ...	M. ...	1 ...	2 ...	Maxwell No. 20.		Killed by fall of coal at face of breast.
17	Martin Knoch, ...	Polish, ...	Miner, ...	33 ...	M. ...	1 ...	3 ...	Dorrance, ...		Killed by fall of slate at face of breast.
18	John Zawczenskie, ...	Polish, ...	Miner, ...	51 ...	M. ...	1 ...	3 ...	Dorrance, ...		Killed by fall of coal at face of breast.
22	Peter Jennings, ...	American, ...	Driver, ...	32 ...	M. ...	1 ...	...	Dorrance, ...		Fatally injured by cars on slope.
23	Francis White, ...	Irish, ...	Slateman, ...	28 ...	S. ...	...	...	Sugar Notch No. 9.		Fatally injured by cars on gangway.
25	Archie Allen, ...	American, ...	Driver, ...	19 ...	S. ...	...	...	Stanton No. 7, ...		Killed by cars in tunnel.
2	James Featherstone, ...	Irish, ...	Fire boss, ...	49 ...	M. ...	1 ...	3 ...	Stanton No. 7, ...		Killed by cars on plane.
6	Walter Zackoffski, ...	Polish, ...	Miner, ...	33 ...	M. ...	1 ...	2 ...	Franklin, ...		Killed by explosion of powder near his box in face of breast.
12	Frank Karbolskie, ...	Polish, ...	Miner, ...	25 ...	S. ...	...	...	Maxwell No. 20.		Killed by explosion of blast in face of breast.
13	John Yaskus, ...	Lithuanian, ...	Miner, ...	27 ...	S. ...	...	...	Maxwell No. 20.		Killed by fall of coal at face of breast.
27	William A. Jones, ...	American, ...	Laborer, ...	36 ...	S. ...	...	...	Stanton No. 7, ...		Fatally burned by explosion of oil while working at a bore hole in old workings.
19	William Stuck, ...	Polish, ...	Miner, ...	45 ...	M. ...	1 ...	3 ...	Red Ash No. 2,		Fatally injured by being struck in abdomen by drill while trying to remove a collar from one leg to another with a drill.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 3	Joseph Kustran, .....	Polish, .....	Driver, .....	16	S.	Prospect, .....	Luzerne, .....	Leg fractured by cars on gangway.
9	John Polonie, .....	Italian, .....	Driver, .....	23	S.	Prospect, .....		Two ribs fractured by cars on gangway.
19	Joseph Magurskie, .....	Polish, .....	Miner, .....	28	M.	Dorrance, .....		Leg fractured by being struck by a rope on slope.
24	Ladwick Banavilnick, .....	Polish, .....	Miner, .....	28	M.	Prospect, .....		Leg fractured by fall of coal on heading.
	Joseph P. Keeney, .....	American, .....	Doorboy, .....	17	S.	South Wilkes-Barre No. 5, .....		Leg fractured by cars on gangway.
31	Peter McGovern, .....	American, .....	Mine foreman, ..	43	M.	Prospect, .....		Leg fractured by being struck by brake lever on slope.
Feb. 1	Alex Georlewskie, .....	Polish, .....	Miner, .....	30	M.	Sugar Notch No. 9, ..		Leg fractured by explosion of blast at face of breast.
9	Adam Kudick, .....	Polish, .....	Carpenter, .....	23	S.	South Wilkes-Barre No. 5, .....		Leg fractured by cars at foot of shaft.
17	Joseph J. McDermott, .....	English, .....	Miner, .....	56	M.	Sugar Notch No. 9, ..		Leg fractured by fall of slate at face of gangway.
21	Austin Gibbons, .....	American, .....	Driver, .....	18	S.	Prospect, .....		Seriously injured by cars on gangway.
March 6	Patrick Mahoney, .....	American, .....	Engineer, .....	26	M.	Stanton No. 7, .....		Toes smashed by switch lever. Outside.
	Andrew Brimer, .....	Polish, .....	Laborer, .....	33	S.	Maxwell No. 20, ....		Seriously injured by explosion of blast at face of breast.
	George Varoskie, .....	Slavonian, ..	Miner, .....	63	M.	Baltimore Tunnel, ...		Ribs fractured by fall of coal at face of breast.
11	Owen Williams, .....	Welsh, .....	Miner, .....	43	M.	Prospect, .....		Leg fractured by fall of roof at face of tunnel.
13	Andrew Hudock, .....	Polish, .....	Miner, .....	31	M.	Red Ash No. 2, ....		Back severely bruised by fall of coal at face of gangway.
14	Theodore Scanlon, .....	American, ..	Laborer, .....	25	S.	Maxwell No. 20, ....		Seriously injured by fall of coal on gangway.
21	Paul Smith, .....	American, ..	Patcher, .....	17	S.	Stanton No. 7, .....		Leg fractured by cars on gangway.
23	Walter Bolnskey, .....	Polish, .....	Laborer, .....	38	M.	South Wilkes-Barre No. 5, .....		Seriously injured by fall of roof at face of breast.
27	Ignatz Spilgas, .....	Russian, ...	Miner, .....	54	M.	Dorrance, .....		Arm fractured by fall of roof at face of breast.
	William Bohn, .....	American, ..	Runner, .....	20	S.	Baltimore Tunnel, ...		Leg fractured by fall of coal at face of breast.
	John Reed, .....	American, ..	Runner, .....	23	M.	South Wilkes-Barre No. 5, .....		Leg fractured by cars on slope.

TABLE 5—Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
March 27	Mike Slavage, .....	Lithuanian, .....	Laborer, .....	47	M.	S o u t h No. 5, Wilkes-Barre		Burned by explosion of gas at face of breast.
28	(George Dominick, .. Thomas Mikalowski, ..	Lithuanian, ..	Miner, .....	43	M.	(Hollenback No. 2, ..		Burned by explosion of gas at face of breast.
May 23	William Dowling, .....	American, ..	Driver, .....	28	S.	Hadleigh, .....		Leg fractured by caps on gangway.
24	John Linevige, .....	Lithuanian, ..	Miner, .....	18	S.	Maxwell No. 20, ....		Leg fractured by fall of coal at face of breast.
	Frank Dumbroski, ...	Polish, .....	Miner, .....	40	M.	Prospect, .....		Burned by explosion of gas at face of breast.
31	William Weidon, .....	American, ..	Patcher, .....	37	S.	S o u t h No. 5, Wilkes-Barre		Fingers blown off by explosion of dynamite cap at face of breast.
June 3	Joseph Loda, .....	Polish, .....	Miner, .....	16	S.	Prospect, .....		Leg fractured by falling while walking on manway.
25	Steve Hargowski, ...	Polish, .....	Miner, .....	36	M.	Prospect, .....		Hip dislocated by fall of roof at face of breast.
27	Andrew Swalock, ....	Slavonian, ..	Laborer, .....	46	S.	Maxwell No. 20, ....		Seriously injured by explosion of dynamite cap at face of breast.
July 19	Frank Kocinski, ....	Polish, .....	Miner, .....	19	M.	Maxwell No. 20, ....		Seriously injured by fall of coal at face of breast.
	John Kissmark, .....	Polish, .....	Driver, .....	42	M.	Maxwell No. 20, ....	Luzerne, ....	Finger cut off by car in breast.
19	Steve Olzenski, .....	Polish, .....	Miner, .....	25	S.	S o u t h No. 5, Wilkes-Barre		Injured by fall of roof at face of breast.
29	Thomas Bartler, .....	Weld, .....	Miner, .....	34	M.	Franklin, .....		Jaw and nose fractured by cars on slope.
Aug. 2	Andrew Shabola, ....	Polish, .....	Timberman, .....	43	M.	Prospect, .....		Thigh fractured by explosion of blast in cross-cut.
4	Daniel Morgan, .....	Weld, .....	Driver, .....	38	M.	S o u t h No. 5, Wilkes-Barre		Pelvis fractured by cars on gangway.
5	Joseph Ballon, .....	Slavonian, ..	Miner, .....	17	S.	Prospect, .....		Leg fractured by explosion of delayed blast at face of breast.
12	John McColski, .....	Polish, .....	Laborer, .....	30	M.	Baltimore Tunnel, ...		Leg fractured by cars on slope.
21	Thomas Lewis, .....	Polish, .....	Miner, .....	26	M.	Prospect, .....		Leg fractured by fall of coal at face of breast.
22	John Thoma, .....	English, ...	Miner, .....	55	M.	Maxwell No. 20, ....		Leg fractured by fall of coal at face of pillar.
	George Murphy, .....	American, ..	Slater, .....	15	S.	Maxwell No. 20, ....		Injured by cars. Outside.
26	George Dombroskie, ..	Polish, .....	Miner, .....	40	M.	Franklin, .....		Leg fractured by fall of roof at face of breast.



Aug.	27	John Livitski, .....	Russian, .....	Miner, .....	40	M. Baltimore No. 5, .....	Leg fractured by cars on gangway.
	28	Michael Martin, .....	German, .....	Miner, .....	42	M. Maxwell No. 20, .....	Leg fractured by cars on gangway.
	29	David R. Williams, ..	Welsh, .....	Miner, .....	52	M. Maxwell No. 20, .....	Leg fractured by fall of roof at face of breast.
	30	Joseph Buravages, ..	Polish, .....	Laborer, .....	29	M. Maxwell No. 20, .....	Burned by explosion of gas in breast.
		William Rutkoffski, ..	Lithuanian, ..	Laborer, .....	33	M. Franklin, .....	Leg fractured by premature blast at face of breast.
Sept.	3	Richard Rolands, ....	American, ..	Chute-boss, .....	31	M. Maxwell No. 20, .....	Arm fractured by machinery in breaker.
	6	Luke Reynolds, .....	American, ..	Runner, .....	20	S. Prospect, .....	Leg fractured by fall of coal on gangway.
	9	Peter Zuarrillo, .....	Italian, .....	Miner, .....	38	S. Prospect, .....	Seriously injured by premature blast at face of breast.
	10	Peter David, .....	Lithuanian, ..	Miner, .....	27	S. Maxwell No. 20, .....	Leg fractured by fall of coal at face of breast.
		John Paskatis, .....	Lithuanian, ..	Miner, .....	42	M. Hollenback No. 2, .....	Seriously injured by premature blast at face of breast.
Oct.	4	Michael Thomas, .....	Slavonian, ..	Miner, .....	53	M. Baltimore No. 5, .....	Leg fractured by fall of coal on airway.
	10	Frank Yauskie, .....	American, ..	Driver, .....	17	S. Derrance, .....	Leg fractured by fall of roof on gangway.
	17	Daniel O. Thomas, ..	Welsh, .....	Miner, .....	42	S. Red Ash No. 2, .....	Leg fractured by fall of coal in old breast.
	21	Martin Torlak, .....	Polish, .....	Patcher, .....	18	S. Maxwell No. 20, .....	Injured by cars on slope.
	31	Andrew Silbous, .....	Hungarian, ..	Fireman, .....	29	M. Baltimore No. 5, .....	Leg fractured by being struck by rope.
Nov.	2	James Brislin, .....	Irish, .....	Carpenter, .....	48	M. Hadleigh, .....	Leg fractured by being struck by piece of timber.
		George Durragh, .....	American, ..	Laborer, .....	23	M. Red Ash No. 2, .....	Wrist broken by cars on gangway.
	4	David Thomas, .....	Welsh, .....	Laborer, .....	23	S. Hollenback No. 2, .....	Hand crushed by cars at face of breast.
	7	Albert Onosko, .....	Polish, .....	Driver, .....	21	S. Prospect, .....	Kicked in face by mule on gangway.
	13	William Bardueliss, ..	Lithuanian, ..	Miner, .....	35	M. Sugar Notch No. 9, .....	Ankle fractured by fall of slate at face of gangway.
	19	Adam Kashuskie, .....	Polish, .....	Driver, .....	29	S. Prospect, .....	Leg fractured by cars on gangway.
	22	Constance Stuchka, ...	Lithuanian, ..	Miner, .....	24	S. South Wilkes-Barre No. 5, .....	Leg fractured by fall of coal at face of breast.
Dec.	2	Anthony Blesnawago, ..	Lithuanian, ..	Miner, .....	26	M. South Wilkes-Barre No. 5, .....	Face, arms and shoulders burned by explosion of gas at face of breast.
	3	Charles Enish, .....	American, ..	Engineer, .....	35	M. Stanton No. 7, .....	Thumb cut off by circular saw in carpenter shop.
	7	George Dierdaff, .....	American, ..	Driver, .....	19	S. Baltimore No. 5, .....	Leg fractured by falling over stretcher chain on rock bank.
	9	Isaac Edwards, .....	American, ..	Patcher, .....	19	S. Maxwell No. 20, .....	Hand injured by cars on gangway.
		Felix Balana, .....	Lithuanian, ..	Miner, .....	50	M. Stanton No. 7, .....	Leg fractured by fall of slate at face of breast.
	11	Lawrence McEvoern, ...	American, ..	Laborer, .....	29	S. Red Ash No. 2, .....	Seriously injured internally by cars on gangway.
	20	Thomas Mazurick, ....	Polish, .....	Miner, .....	28	M. Prospect, .....	Leg fractured by fall of coal at face of breast.
		Thomas Kurula, .....	Lithuanian, ..	Miner, .....	39	M. Hollenback No. 2, .....	Seriously injured by fall of slate at face of breast.
	28	George Knaier, .....	German, ....	Trackman, .....	43	M. South Wilkes-Barre No. 5, .....	Seriously injured by cars on gangway.
	31	James Simmons, .....	English, ....	Fire boss, .....	56	M. Baltimore No. 5, .....	Ribs fractured. He was making an examination and fell while coming down one of the breasts.

Luzerne, ....

## CONDITION OF COLLIERIES

## LEHIGH AND WILKES-BARRE COAL COMPANY

Stanton No. 7, Maxwell No. 20, South Wilkes-Barre No. 5, Hollenback No. 2, Sugar Notch No. 9 Collieries.—Ventilation, roads, drainage and condition as to safety, good.

## LEHIGH VALLEY COAL COMPANY

Prospect and Dorrance Collieries.—Ventilation, roads, drainage and condition as to safety, good.

Franklin Colliery.—Ventilation and condition as to safety, good. Roads and drainage fair.

## DELAWARE AND HUDSON COMPANY

Baltimore No. 5 and Baltimore Tunnel Collieries.—Ventilation, roads, drainage, and condition as to safety, good.

## RED ASH COAL COMPANY

Red Ash No. 2 Colliery.—Ventilation, roads and drainage fair. Condition as to safety, good.

## WILKES-BARRE ANTHRACITE COAL COMPANY

Hillman Vein Colliery.—Ventilation, roads, drainage and condition as to safety, good.

## RISSINGER BROTHERS AND COMPANY, INCORPORATED

Miners Mills Colliery.—Ventilation, roads, and drainage fair. Condition as to safety, good.

## PITTSSTON COAL MINING COMPANY

Hadleigh Colliery.—Ventilation, roads and drainage fair. Condition as to safety, good.

## IMPROVEMENTS

## LEHIGH AND WILKES-BARRE COAL COMPANY

Stanton No. 7 Colliery.—Completed fireproof mule barn on Empire No. 4 shaft level and tunnel Abbott to Abbott, 2nd east, No. 4 slope. Installed concrete and steel timbering on shaft landing, also in small engine and pump rooms.

Outside.—Completed new steam line from Empire boiler plant to No. 4 slope and No. 15 Plane engines, timber yard and saw mill installed; safety car stops at Nos. 4 and 7 shafts and fire protection system in breaker.

Maxwell No. 20 Colliery.—Inside: Completed fireproof mule barn and concrete manway from surface to Five Foot.

Outside.—Installed breaker fire lines and remodeled mule barn on No. 4 slope.

South Wilkes-Barre No. 5 Colliery.—Inside: Completed fireproof mule barns on Nos. 3 and 5 shaft levels; No. 8 tunnel extended to Baltimore, and drove tunnel from Abbott to Abbott, 1st east No. 7 slope.

Outside.—Completed addition to power plant.

Hollenback No. 2 Colliery.—Inside: Installed concrete and steel timbering on Baltimore and Red Ash landings to shaft, also in small engine and pump rooms. Completed fireproof mule barn; also No. 31 tunnel, Top Red Ash to Ross; No. 32 tunnel, Kidney to Abbott, and No. 17 tunnel extended to Ross.

Outside.—Completed saw mill and timber yard.

Sugar Notch No. 9 Colliery.—Inside: Completed fireproof mule barn; No. 9 plane Ross to Red Ash; also No. 25 tunnel Hillman to Kidney; No. 26 tunnel, Hillman to Kidney; tunnel, Twin to Ross, 3rd east, No. 5 plane; tunnel, Five Foot to Five Foot, No. 20 tunnel west.

Outside.—Completed fire pump and breaker fire lines, and made addition to mule barn.

#### LEHIGH VALLEY COAL COMPANY

Prospect Colliery.—Inside: The work of completing fireproof additions to the Red Ash and Baltimore barns was carried out. Man cars were placed on No. 8 rock slope to hoist men from the Red Ash vein to the Oakwood level. No. 57 rock tunnel, 500 feet long, from the Baltimore to the Skidmore vein, Prospect Shaft level, was driven and electric haulage installed therein. No. 58 rock tunnel was driven from the Abbott to the Bowkley vein a distance of 280 feet, for the purpose of mining a virgin area in the vicinity of Oakwood shaft.

Outside.—An addition was built to the breaker to house the box car loader. Three new sets of Compound rolls were placed in the breaker. A concrete engine house for No. 8 slope was completed, in which were installed a pair of second motion engines to replace the old hook engine operating the slope. A mess house, equipped with all improvements and conveniences for the outside employes was started. Work was started on the remodeling of the old car repair shop to accommodate the blacksmith and carpenter shops. A 10 inch rope hole was driven from the surface to the Red Ash vein, a distance of 760 feet, to avoid carrying the rope that operates No. 10 slope over the Laurel Line tracks. A 6 inch hole from the surface to the Abbott vein, for sewage from the mess house, was drilled a distance of 126 feet.

Henry.—Inside: The installation of pumps for water concentration to the Red Ash vein, mentioned in report of 1911, was completed. The fireproofing of the Red Ash, Baltimore and Henry Five Foot barns was also completed. Rope haulage was installed in No. 2 level from No. 11 slope to No. 6 plane and placed in operation. The second opening rock plane from Skidmore to Lower Baltimore vein for No. 36 rock slope was completed. No. 17 plane from Lower Baltimore vein to the Skidmore landing in Red Ash shaft was driven to serve as a manway. Test drilling to prove Hillman and Bowkley veins was also carried on.



Outside.—A concrete fan house was built in which a 20-foot fan was installed to ventilate the Hillman and Five Foot veins, releasing two old 15 foot fans. A concrete crusher house and conduit to take ashes from the boiler house to two 10 inch bore holes from the surface to Lower Baltimore vein were constructed. An addition to the outside barn, to quarter an additional number of mules, was also completed.

Warrior Run.—Inside: No. 8 tunnel was driven from the C to the D vein a distance of 210 feet. No. 22 tunnel was driven from the Hillman to the Mills vein, a distance of 210 feet to develop a virgin area. No. 5 rock plane on 30 degrees was driven a distance of 105 feet from the Hillman to the Mills vein to serve as a second opening. Built pump house of fireproof material at the foot of the old slope in the B vein.

Outside.—A concrete fan-house was built, in which was installed a 16-foot fan to replace two fans that were in poor condition, one of which was destroyed by fire. A concrete powder house was also constructed.

Dorrance Colliery.—Inside: The Hillman, Baltimore, Red Ash and Rock slope fireproof barns were completed. Two electric motors were placed in the Cooper vein, No. 21 tunnel section, and 2 in the Red Ash vein, No. 24 slope section. A 4-inch hole was drilled from the Hillman to Cooper vein 384 feet deep, and a 4-inch hole was drilled from the Cooper to the Red Ash vein 265 feet deep, to carry electric cables. A 4-inch drainage hole, 62 feet deep, was drilled from the Bowkley to the Hillman vein, to release the pump in the Bowkley vein. A 10-inch hole was drilled from the surface to the Baltimore vein for silting purposes, depth 605 feet. No. 19 rock plane was driven at foot of No. 6 extension slope from Bennett to Bennett vein, through a fault a distance of 90 feet. New guides were placed in the Hillman shaft from the surface to the Hillman vein, and also in the Red Ash shaft from the surface to the Baltimore vein. The construction of a pump room in the Baltimore vein and also in the Hillman vein was started, for the installation of two 1,500-gallon capacity pumps to take care of the large silting operations being carried on.

Outside.—The breaker was practically rebuilt, concrete retaining walls being placed at the foot of the breaker plane to replace wooden posts.

Franklin Colliery.—Inside: No. 18 rock slope was driven from the Brown slope in the Baltimore vein to the Sump vein, a distance of 243 feet. The fireproofing of the rock slope barn was completed. A 4-inch drainage hole was drilled from the Skidmore to the Baltimore vein, a distance of 292 feet, to unwater a large territory.

Outside.—The concrete foundation for the new breaker was completed and a shaft 8 feet square was sunk a depth of 60 feet from the surface to the old workings in the Baltimore vein, with a view of silting the openings under the breaker foundations. Entrance of the rock slope was concreted. Built engine house for No. 9 slope and installed therein a pair of 20 by 30 engines.

#### DELAWARE AND HUDSON COMPANY

Baltimore No. 5 Colliery.—Rock plane air return, Red Ash to Red Ash Top Split in Conyngham shaft, 7 feet by 12 feet by 120 feet, 12 degree pitch.

At Conyngham shaft, concrete partition walls were built in shaft from Red Ash Top Split to 150 feet above Baltimore vein. New car haul in Red Ash vein installed at foot of shaft, and a rock plane 108 feet long driven as return airway, Red Ash vein.

At Baltimore No. 2, concreted east side foot of shaft in Red Ash vein, shaft at pump room 7 feet by 10 feet by 60 feet.

Established Mine Rescue Station and lecture room for Wilkes-Barre Division at Conyngham, equipped with Draeger helmets and pulmotors, etc.

Completed the work of concreting barns.

#### WILKES-BARRE ANTHRACITE COAL COMPANY

Hillman Vein Colliery.—Inside: Built new fire boss shanty and emergency hospital of fireproof material at foot of shaft, also new 16-stall fireproof stable near foot of shaft. Installed 70-horse power engine at top of No 2. East slope driven 300 feet. Baltimore slope extended 940 feet. Baltimore tunnel driven 630 feet toward Stanton vein as the second opening for Baltimore workings. Two tunnels from Hillman vein to Kidney vein, each 220 feet, connected by a gangway. New 40-horse power engine installed in Hillman slope. Hillman slope driven 450 feet. Electric triplex pump installed in Hillman slope. 40-horse power engine installed for placing of refuse, and 20-horse power engine installed in new Seven Foot slope. New Seven Foot slope driven 300 feet. One triplex pump installed in pump lift to supply washery.

Outside.—New fan installed in boiler house for forced draft on boilers. Two bore holes driven from surface to the Seven Foot vein, about 90 feet each, to be used for slushing. Washery completed and in operation.

#### PITTSTON COAL MINING COMPANY

Hadleigh Colliery.—Outside: A new breaker is being built to replace the old one, which was torn down.

#### DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

This Company is sinking two new shafts on the Laurel Run farm near the Parson station of the Delaware and Hudson Company. These shafts will be sunk to a depth of 1,150 feet to the Red Ash vein. The coal will be conveyed in mine cars over the old Wilkes-Barre and Eastern road bed and bridge to the Pettebone breaker. Both shafts have been sunk to the rock and concreted to surface.





## EIGHTH DISTRICT

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LUZERNE AND LACKAWANNA COUNTIES

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Pittston, Pa., February 20, 1913.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor of transmitting herewith the Annual Report of the Eighth Anthracite District for the year ending December 31, 1912.

Respectfully submitted,

SAMUEL J. JENNINGS, Inspector.

## SUMMARY OF STATISTICS

Number of collieries, .....	15
Number of mines, .....	35
Number of mines in operation, .....	29
Number of tons of coal shipped to market, .....	3,267,405
Number of tons used at mines for steam and heat, .....	463,193
Number of tons sold to local trade and used by employes, .....	98,104
Number of tons produced, .....	3,828,702
Number of tons produced by compressed air machines, ..	.....
Number of tons produced by electrical machines, .....	.....
Number of persons employed inside of mines, .....	6,165
Number of persons employed outside, .....	2,064
Number of fatal accidents inside of mines, .....	28
Number of fatal accidents outside, .....	4
Number of non-fatal accidents inside of mines, .....	39
Number of non-fatal accidents outside, .....	6
Number of tons of coal produced per fatal accident inside, .....	136,739
Number of tons produced per fatal accident outside, ....	957,175
Number of tons produced per fatal accident inside and outside, .....	119,647
Number of persons employed per fatal accident inside, ..	220
Number of persons employed per fatal accident outside, ..	516
Number of persons employed per fatal accident inside and outside, .....	257
Number of persons employed per non-fatal accident inside, .....	158
Number of persons employed per non-fatal accident outside, .....	344
Number of persons employed per non-fatal accident inside and outside, .....	183
Number of wives made widows, .....	17
Number of children made orphans, .....	37
Number of steam locomotives used inside of mines, ....	4
Number of steam locomotives used outside, .....	10
Number of compressed air locomotives used inside, .....	6
Number of compressed air locomotives used outside, ....	.....
Number of electric motors used inside, .....	29
Number of electric motors used outside, .....	.....
Number of fans in use, .....	35
Number of furnaces in use, .....	.....
Number of gaseous mines in operation, .....	17
Number of non-gaseous mines in operation, .....	12
Number of new mines opened, .....	3
Number of old mines abandoned, .....	.....

TABLE A  
PRODUCTION OF COAL

Names of Operators	Tons
Lehigh Valley Coal Company, .....	1,701,231
Kingston Coal Company, .....	779,395
Forty Fort Coal Company, .....	530,573
Mt. Lookout Coal Company, .....	285,571
Plymouth Coal Company, .....	191,400
Raub Coal Company, .....	137,849
Delaware, Lackawanna and Western Railroad Company, .....	93,786
East Boston Coal Company, .....	79,943
Rissinger Brothers and Company, Incorporated, .....	22,865
Clear Spring Coal Company, .....	6,089
Total, .....	3,828,702

Production by Counties

Luzerne, .....	3,527,169
Lackawanna, .....	301,533
Total, .....	3,828,702

TABLE B.—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Number of employees inside	Number of employees outside	Total number of employees	Number of employees inside per fatal accident	Number of employees outside per fatal accident	Number of employees inside per non-fatal accident	Number of employees outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total								
Lehigh Valley Coal Co., .....	13	1	14	16	5	21	130,864	2,282	738	3,020	176	738	143	148
Kingston Coal Co., .....	5	1	6	3	.....	3	156,879	988	390	1,378	198	329	329	329
Forty Fort Coal Co., .....	3	.....	3	6	.....	6	176,858	1,149	318	1,467	383	390	191	383
Mc. Lookout Coal Co., .....	3	.....	3	3	.....	3	95,190	546	162	708	182	.....	182	.....
Plymouth Coal Co., .....	2	.....	2	6	.....	6	95,700	360	113	473	180	.....	69	.....
Raub Coal Co., .....	1	.....	1	4	1	5	137,849	306	119	425	396	.....	77	119
Delaware, Lackawanna and Western Railroad Co., .....	1	.....	1	1	.....	1	93,786	251	38	289	251	.....	251	.....
East Boston Coal Co., .....	.....	2	2	.....	.....	.....	.....	237	125	362	.....	62	.....	.....
Miscellaneous Companies, .....	.....	.....	.....	.....	.....	.....	.....	46	61	107	.....	.....	.....	.....
Totals and averages for district, ....	28	4	32	39	6	45	136,759	6,165	2,064	8,229	220	516	158	344



TABLE C.—Classification of Fatal Accidents Inside and Outside of Mines

	Months												Totals	Percentages
	January	February	March	April	May	June	July	August	September	October	November	December		
Causes of Accidents Inside														
Falls of coal, .....					1				1				2	7.14
Falls of roof, .....	1		1					1	1	2	1		13	46.43
Mine cars, .....					1				1		1		4	14.29
Explosions of gas, .....													1	3.57
Explosions of powder and dynamite, .....			2				1						3	10.71
Blasts, premature and otherwise, .....			2					1	1				4	14.29
Falling into shafts, ..							1						1	3.57
Totals, .....	1	4	5		2	2	4	2	4	2	2		28	100.00
Causes of Accidents Outside														
Cars, .....	1				1								2	50.00
Machinery, .....				1									1	25.00
Scalded by steam, ...			1										1	25.00
Totals, .....	1		1	1	1								4	100.00
Grand totals inside and outside, .....	2	4	6	1	3	2	4	2	4	2	2		32	.....

TABLE D.—Classification of Non-Fatal Accidents Inside and Outside of Mines

	Months												Totals	Percentages
	January	February	March	April	May	June	July	August	September	October	November	December		
Causes of Accidents Inside														
Falls of coal, .....	1					1			1				3	7.70
Falls of roof, .....	1	2	2		1	1	2	1		2	3	1	16	41.03
Mine cars, .....		1	2			1	1			2	2	2	12	30.77
Explosions of gas, ....					1								1	2.56
Explosions of powder and dynamite, .....		1								1			2	5.13
Blasts, premature and otherwise, .....					2								2	5.13
Struck by slope rope, .....					1								1	2.56
Struck by steel I beam, .....										1			1	2.56
Struck by timber, .....	1												1	2.56
Totals, .....	3	4	4		6	3	2	1	1	6	5	3	39	100.00
Causes of Accidents Outside														
Cars, .....	1					1		1	1			1	5	83.33
Struck by timber, ....	1												1	16.67
Totals, .....	2					1		1	1			1	6	100.00
Grand totals inside and outside, .....	5	4	4		6	4	3	2	2	6	5	4	45	.....

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	December
<b>Inside</b>												
Miners, .....	1	2	2	1	1	1	2	2	3	1	1	13
Miners' laborers, .....	1	2	2	1	1	1	1	1	1	1	1	11
Drivers and runners, .....	1	1	1	1	1	1	1	1	1	1	1	11
Doorboys and helpers, .....	1	1	1	1	1	1	1	1	1	1	1	11
Shaft men, .....	1	1	1	1	1	1	1	1	1	1	1	11
Totals, .....	1	4	5	2	2	4	2	4	2	2	2	28
<b>Outside</b>												
Engineers and firemen, .....	1	1	1	1	1	1	1	1	1	1	1	1
Shotpickers (boys), .....	1	1	1	1	1	1	1	1	1	1	1	1
Laborers, .....	1	1	1	1	1	1	1	1	1	1	1	2
Totals, .....	1	1	1	1	1	1	1	1	1	1	1	4
Grand totals inside and outside, .....	2	4	6	1	3	2	4	2	4	2	2	32

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	December
<b>Inside</b>												
Fire bosses and assistants, .....	1	1	1	1	1	1	1	1	1	1	1	1
Miners, .....	1	1	1	1	1	1	1	1	1	1	1	13
Miners' laborers, .....	1	1	1	1	1	1	1	1	1	1	1	13
Drivers and runners, .....	1	1	1	1	1	1	1	1	1	1	1	8
Engineers, .....	1	1	1	1	1	1	1	1	1	1	1	2
Footmen, .....	1	1	1	1	1	1	1	1	1	1	1	3
Totals, .....	3	4	4	6	3	3	1	1	6	5	3	39
<b>Outside</b>												
Loaders, .....	1	1	1	1	1	1	1	1	1	1	1	1
Propmen, .....	1	1	1	1	1	1	1	1	1	1	1	1
Footmen, .....	1	1	1	1	1	1	1	1	1	1	1	1
Miners, .....	1	1	1	1	1	1	1	1	1	1	1	1
Laborers, .....	1	1	1	1	1	1	1	1	1	1	1	2
Totals, .....	2	2	2	2	2	2	2	2	2	2	2	6
Grand totals inside and outside, .....	5	4	4	6	4	3	2	2	6	5	4	45

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	Totals
American, .....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	2
Welsh, .....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	2
Polish, .....	.....	2	4	.....	1	.....	1	1	2	1	1	14
Italian, .....	.....	1	1	.....	.....	.....	1	1	.....	.....	.....	7
Slavonian, .....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	2
Lithuanian, .....	.....	.....	1	.....	1	1	1	.....	1	.....	.....	4
Russian, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Totals, .....	2	4	6	1	3	2	4	2	4	2	2	32

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	Totals
American, .....	.....	1	.....	.....	2	.....	.....	1	.....	1	1	6
English, .....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1	1
German, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Polish, .....	2	1	4	.....	2	1	1	1	.....	3	2	18
Hungarian, .....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1
Italian, .....	1	2	.....	.....	.....	1	.....	.....	.....	1	1	6
Slavonian, .....	1	.....	.....	.....	1	2	.....	.....	1	1	1	7
Lithuanian, .....	.....	.....	.....	.....	.....	.....	1	.....	.....	1	.....	3
Austrian, .....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1
Russian, .....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Totals, .....	5	4	4	.....	6	4	3	2	2	6	5	45

TABLE I.—Operators and mines, kind of openings, type and size of fans, size of furnaces, volume of air produced by fan or furnace per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	Kind of opening	Gaseous or non-gaseous	Method of ventilation	Diameter of fan in feet and inches	Width of blades in feet and inches	Depth of blades in feet and inches	Number of revolutions per minute	Water gauge developed—in inches	Name of fan	Power used	Area of furnace bars in square feet	Number of splits of air currents	Number of cubic feet of air per minute entering the mine at inlet	Total number of cubic feet of air per minute circulating in all the splits	Number of cubic feet of air per minute passing out at outlet	Number of persons employed inside
Leligh Valley Coal Co. Exeter Colliery:	Shaft, ....	Gaseous, ..	{ 2 Fans, .. Fan, .... Fan, ....	{ 20 20 22	6.8 6.8 6.11	5.10 5.10 6.7	76 76 65	1 1 1.5	{ Guibal, ... ... ...	Steam, ....	{ ... ...	8	185,128	102,685	208,809	313
Red Ash Shaft, .....	Shaft, ....	Gaseous, ..	{ Fan, .... Fan, ....	{ 20 20	6.8 6.11	5.10 6.7	76 65	1 1.5	{ Guibal, ... ...	Steam, ....	{ ...	5	145,389	122,307	154,861	{ 301 301
Pittston Shaft, .....	Shaft, ....	Gaseous, ..	{ Fan, .... Fan, ....	{ 20 20	6.8 6.11	5.10 6.7	76 65	1 1.5	{ Guibal, ... ...	Steam, ....	{ ...	4	145,389	122,307	154,861	{ 301 301
*Knight Shaft, .....	Shaft, ....	Gaseous, ..	{ Fan, .... Fan, ....	{ 20 20	6.8 6.11	5.10 6.7	76 65	1 1.5	{ Guibal, ... ...	Steam, ....	{ ...	5	145,389	122,307	154,861	{ 301 301
Maltby Colliery:	Shaft, ....	Gaseous, ..	{ 2 Fans, .. Fan, .... Fan, ....	{ 25 20 12	8.11 5.11 1.6	6.10 5.8 1.4	72 82 180	3 2.5 .5	{ Guibal, ... ... ...	Steam, ....	{ ... ...	10	155,850	124,685	187,169	421
No. 2 Shaft, .....	Shaft, ....	Gaseous, ..	{ Fan, .... Fan, ....	{ 25 20	8.11 5.11	6.10 5.8	72 82	3 2.5	{ Guibal, ... ...	Steam, ....	{ ...	2	41,160	22,650	43,863	27
Mountain Tunnel, .....	Tunnel, ..	Non-gas...	{ Fan, .... Fan, ....	{ 25 20	8.11 5.11	6.10 5.8	72 82	3 2.5	{ Guibal, ... ...	Steam, ....	{ ...	2	41,160	22,650	43,863	27
Four Foot Slope, .....	Slope, ....	Non-gas...	{ Fan, .... Fan, ....	{ 25 20	8.11 5.11	6.10 5.8	72 82	3 2.5	{ Guibal, ... ...	Steam, ....	{ ...	2	41,160	22,650	43,863	27
William A. Colliery:	Shaft, ....	Non-gas...	{ Fan, .... Fan, .... Fan, ....	{ 18 18 20	5.8 5.8 5.8	5.9 5.9 5.9	75 75 80	.7 .8 1.3	{ Guibal, ... ... ...	Steam, ....	{ ... ...	4	62,000	60,500	63,000	106
*Lawrence Shaft, .....	Shaft, ....	Non-gas...	{ Fan, .... Fan, .... Fan, ....	{ 18 18 20	5.8 5.8 5.8	5.9 5.9 5.9	75 75 80	.7 .8 1.3	{ Guibal, ... ... ...	Steam, ....	{ ... ...	6	62,000	60,500	63,000	106
*Babylon Shaft, .....	Shaft, ....	Non-gas...	{ Fan, .... Fan, .... Fan, ....	{ 18 18 20	5.8 5.8 5.8	5.9 5.9 5.9	75 75 80	.7 .8 1.3	{ Guibal, ... ... ...	Steam, ....	{ ... ...	4	62,000	60,500	63,000	106
No. 10 Tunnel, .....	Tunnel, ..	Non-gas...	{ Fan, .... Fan, .... Fan, ....	{ 18 18 20	5.8 5.8 5.8	5.9 5.9 5.9	75 75 80	.7 .8 1.3	{ Guibal, ... ... ...	Steam, ....	{ ... ...	2	62,000	60,500	63,000	106
Seneca Colliery:	Shaft, ....	Gaseous, ..	{ Fan, .... Fan, .... Fan, ....	{ 24 20 20	8. 6. 6.	6. 6. 6.	74 80 50	2.7 1.2 .8	{ Guibal, ... ... ...	Steam, ....	{ ... ...	5	121,700	78,100	122,400	282
Twin Shaft, .....	Shaft, ....	Gaseous, ..	{ Fan, .... Fan, .... Fan, ....	{ 24 20 20	8. 6. 6.	6. 6. 6.	74 80 50	2.7 1.2 .8	{ Guibal, ... ... ...	Steam, ....	{ ... ...	4	121,700	78,100	122,400	282
*Cox Shaft, .....	Shaft, ....	Gaseous, ..	{ Fan, .... Fan, .... Fan, ....	{ 24 20 20	8. 6. 6.	6. 6. 6.	74 80 50	2.7 1.2 .8	{ Guibal, ... ... ...	Steam, ....	{ ... ...	1	121,700	78,100	122,400	282
Pittston Shaft, .....	Shaft, ....	Gaseous, ..	{ Fan, .... Fan, .... Fan, ....	{ 24 20 20	8. 6. 6.	6. 6. 6.	74 80 50	2.7 1.2 .8	{ Guibal, ... ... ...	Steam, ....	{ ... ...	5	121,700	78,100	122,400	282
Westmoreland Colliery:	Tunnel, ..	Gaseous, ..	{ Fan, .... Fan, .... Fan, ....	{ 20 20 20	5.11 5.11 5.11	5.10 5.10 5.10	64 64 64	1.5 1.5 1.5	{ Guibal, ... ... ...	Steam, ....	{ ... ...	5	90,100	82,000	93,500	249
No. 1 Tunnel, .....	Tunnel, ..	Gaseous, ..	{ Fan, .... Fan, .... Fan, ....	{ 20 20 20	5.11 5.11 5.11	5.10 5.10 5.10	64 64 64	1.5 1.5 1.5	{ Guibal, ... ... ...	Steam, ....	{ ... ...	5	90,100	82,000	93,500	249

\*Mine used for ventilation and emergency purposes only; no coal is hoisted from it.

Stevens Colliery, No. 1 Shaft, No. 2 Shaft,	Shaft, Shaft,	Gaseous, Gaseous,	Fan, Fan,	20 20	6. 5.	7. 6.	70 65	1. 1.	Gubal, Gubal,	Steam, Steam,	3 4	91,400 87,500	61,200 59,400	92,000 88,700	{ 152 }	
Kingston Coal Co. Kingston No. 4 Colliery: No. 1 Shaft, No. 4 Shaft,	Shaft, Shaft,	Gaseous, Gaseous,	2 Fans, 2 Fans,	{ 25 25 25 }	8. 8. 8.	8. 8. 8.	70 74 78	2.5 2.6 2.	{ Gubal, Gubal, Gubal,	Steam, Steam, Steam,	9 8	236,126 146,596	214,145 123,300	245,076 165,391	528 460	
Forty Fort Coal Co. Harry E. Colliery: No. 1 Shaft, Baby Tunnel,	Shaft, Tunnel,	Gaseous, Gaseous,	3 Fans, .....	{ 25 15 13.4 }	8. 4.6 3.8	6.10 4.6 3.2	75 85 85	2. 1. 1.	{ Gubal, Gubal, Gubal,	Steam, Steam, Steam,	15	298,500	281,400	307,700	564	
Forty Fort Colliery: No. 1 Shaft,	Shaft,	Gaseous,	2 Fans,	{ 20 20 }	7. 7.	6. 6.8	85 85	1.4 1.4	{ Gubal, Gubal,	Steam, Steam,	10	104,500	146,900	181,200	585	
Mt. Lookout Coal Co. Mt. Lookout Colliery: No. 1 Shaft,	Shaft,	Gaseous,	2 Fans,	{ 20 20 }	7. 6.3	6.10 5.4	83 82	2. 2.	{ Gubal, Gubal,	Steam, Steam,	13	159,000	153,800	162,700	546	
Plymouth Coal Co. Black Diamond Colliery: No. 1 Shaft,	Shaft,	Gaseous,	Fan,	20	6.	6.6	90	1.9	Vulcan,	Steam,	5	125,000	75,000	130,000	360	
Raub Coal Co. Louise Colliery: Wadell Shaft, Sand Slope, Ross Slope, Klondike Ross Tunnel, Klondike Tunnel, Mt. Thomas Tunnel, Nine Foot Slope, Nine Foot Tunnel,	Shaft, Slope, Slope, Tunnel, Tunnel, Tunnel, Slope, Tunnel,	Non-gas, Non-gas, Non-gas, Non-gas, Non-gas, Non-gas, Non-gas, Non-gas,	{ Natural, Natural, Natural, Natural, Natural, Fan, Natural, Natural,	..... ..... ..... ..... ..... 13 .....	..... ..... ..... ..... ..... 5. .....	..... ..... ..... ..... ..... 5. .....	..... ..... ..... ..... ..... 1.0 .....	..... ..... ..... ..... ..... ..... .....	..... ..... ..... ..... ..... Gubal, .....	..... ..... ..... ..... ..... Steam, .....	..... ..... ..... ..... ..... ..... .....	..... ..... ..... ..... ..... ..... .....	..... ..... ..... ..... ..... ..... .....	..... ..... ..... ..... ..... ..... .....	..... ..... ..... ..... ..... ..... .....	..... ..... ..... ..... ..... ..... .....
Delaware, Lackawanna and Western Railroad Co. Petroleum Colliery: No. 1 Shaft, No. 2 Shaft,	Shaft, Shaft,	Gaseous, Gaseous,	Fan, Fan,	22 35	6.2 10.1	6. 9.1	120 52	1.7 2.3	{ Dickson, Dickson,	Steam, Steam,	9	182,000	162,500	207,800	251	
East Boston Coal Co. East Boston Colliery: No. 1 Shaft, Hissinger Brothers and Co., Incorporated Troy Colliery: No. 1 Tunnel,	Shaft, Shaft, Shaft, Tunnel,	Gaseous, Gaseous, Gaseous, Non-gas,	2 Fans, ..... Natural,	{ 25 25 }	7. 7.	7. 7.	56 60	1.5 1.5	{ Gubal, Gubal,	Steam, Steam, .....	9	164,700	129,600	166,700	297	
											2	5,600	5,600	5,725	46	

\*Mine used for ventilation and emergency purposes only; no coal is hoisted from it.



TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	Name of General Superintendent	Post Office	Name of Superintendent	Post Office	Railroad to Mine
Lehigh Valley Coal Co. Exeter, ..... Guthrie, ..... W. Schuoreland, ..... William A., ..... Seneca, ..... Stevens, .....	Luzerne, Luzerne, Luzerne, Lackawanna Luzerne, Luzerne,	Thomas Thomas, ....	Wilkes-Barre, .....	William D. Owens,...	Pittston, .....	Lehigh Valley
Kingston Coal Co. Kingston No. 4, ..... Kingston No. 4, Washery, ..	Luzerne, .....	F. E. Zerby, .....	Kingston, .....	Thomas H. Williams,	Kingston, .....	L. V., D. L. and W., and D. and H.
Forty Fort Coal Co. Harry F., ..... Forty Fort, .....	Luzerne, .....	F. H. Hemelright, ..	Scranton, .....	James J. McCarty,...	Luzerne, .....	Lehigh Valley
Mt. Lookout Coal Co. Mt. Lookout, .....	Luzerne, .....	F. H. Hemelright,...	Scranton, .....	Seward Button, ....	Wyoming, .....	L. V. and D. L. and W.
Plymouth Coal Co. Black Diamond, .....	Luzerne, .....	G. S. Jones, .....	Luzerne, .....	G. S. Jones, .....	Luzerne, .....	L. V. and D. L. and W.
Raub Coal Co. Louise, .....	Luzerne, .....	Gwilym Edwards, ..	Luzerne, .....	Gwilym Edwards, ..	Luzerne, .....	Lehigh Valley
Delaware, Lackawanna and Western Railroad Co. Pettobene, .....	Luzerne, .....	R. A. Phillips, .....	Scranton, .....	H. G. Davis, .....	Kingston, .....	D. L. and W.
East Boston Coal Co. East Boston, ..... East Boston Washery, ....	Luzerne, .....	W. T. Payne, .....	Kingston, .....	W. T. Payne, .....	Kingston, .....	L. V. and D. L. and W.
Rissinger Brothers and Co., Incorporated Troy, .....	Luzerne, .....	H. E. Rissinger, ....	Pittston, .....	.....	.....	Lehigh Valley
Clear Spring Coal Co. Clear Spring Washery, .....	Luzerne, .....	J. Paul Cake, .....	Pittston, .....	.....	.....	Lehigh Valley

TABLE 2.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured, quantity of powder, dynamite and permissible explosives used, etc.

Names of Operators and Collieries	County	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employees	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives			Number of horses and mules
										Number of pounds of powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used	
Exeter, .....	Luzerne, .....	379,370	53,608	23,648	456,536	323	774	5	1	169,375	244,555	.....	130
Matthys, .....	Luzerne, .....	273,053	44,546	6,013	333,612	316	613	3	1	182,325	189,955	.....	95
William A., .....	Lackawanna, .....	261,917	33,729	5,837	301,553	319	556	2	6	231,600	6,155	.....	83
Seneca, .....	Luzerne, .....	241,340	40,447	4,297	286,654	322	511	1	5	236,575	9,700	.....	92
Westmoreland, .....	Luzerne, .....	176,934	18,829	4,946	200,659	225	339	2	2	61,650	147,200	2,397	38
Stevens, .....	Luzerne, .....	102,917	19,260	.....	132,177	8	197	1	.....	23,700	45,839	.....	35
Totals, .....	.....	1,436,051	220,419	44,761	1,701,231	.....	3,020	11	21	1,005,125	593,334	2,397	473
Kingston Coal Co., .....	.....	523,526	58,766	13,598	605,890	253	1,321	6	3	509,425	7,075	20,850	136
Kingston No. 4, .....	Luzerne, .....	162,346	4,290	6,869	173,505	226	47	.....	.....	.....	.....	.....	.....
Totals, .....	.....	685,872	63,056	20,467	779,395	.....	1,378	6	3	509,425	7,075	20,850	136
Forty Fort Coal Co., .....	.....	241,680	31,829	3,408	276,617	211	748	2	2	194,800	80,718	.....	96
Harry E., .....	Luzerne, .....	224,704	24,358	4,314	253,366	200	741	1	4	184,425	90,575	.....	91
Totals, .....	.....	466,384	56,767	7,422	530,573	.....	1,467	3	6	379,225	171,293	.....	187
Mt. Lookout Coal Co., .....	.....	254,950	25,495	5,126	285,571	217	798	3	3	221,125	131,625	.....	38
Mt. Lookout, .....	Luzerne, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

\*Coal prepared at William A. Breaker.



TABLE 2. —Part 2

Names of Operators	County	Number of Boilers				Locomotives			Total horse power	Number of steam engines of all classes	Total horse power	Number of pumps delivering water to surface	Capacity in gallons per minute	Quantity delivered to surface per minute—gallons	Number of electric dynamos	Number of air compressors
		Cylindrical	Horse power	Tubular	Horse power	Steam	Air	Electric								
Lehigh Valley Coal Co.,	{ Luzerne,..... Lackawanna, ..  Luzerne,..... Delaware, Lackawanna and Western Railroad Co., East Boston Coal Co., Rissinger Brothers and Co., Incorporated, Clear Spring Coal Co.,	.....	.....	43	11,694	11,694	7	6	16	128	9,357	34	25,253	18,544	8	2
Kingston Coal Co.,		.....	.....	16	4,500	4,500	1	.....	4	38	4,850	.....	8,600	5,100	4	2
Forty Fort Coal Co.,		.....	.....	15	4,650	4,650	.....	.....	.....	39	3,730	.....	6,100	3,800	.....	3
Mt. Lookout Coal Co.,		.....	.....	10	2,600	2,600	.....	.....	8	40	2,100	.....	6,750	2,900	.....	3
Plymouth Coal Co.,		.....	.....	14	2,400	2,400	1	.....	.....	44	3,000	.....	5,400	3,800	.....	1
Rauh Coal Co.,		.....	.....	6	1,160	1,160	2	.....	.....	29	1,670	.....	750	450	.....	.....
Delaware, Lackawanna and Western Railroad Co.,		.....	.....	10	1,350	1,350	.....	.....	1	26	2,716	.....	160	160	.....	1
East Boston Coal Co.,		.....	.....	11	2,212	2,212	.....	.....	.....	29	1,368	.....	5,000	3,500	.....	2
Rissinger Brothers and Co., Incorporated,		.....	.....	3	240	240	.....	.....	.....	3	180	.....	230	50	.....	.....
Clear Spring Coal Co.,		.....	.....	2	240	240	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals,	.....	.....	240	30,296	30,146	14	6	29	376	28,971	63	58,248	38,304	19	14	

TABLE 3.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside											Outside											Grand total inside and outside	
		Mine foremen	Assistant mine foremen	Fire bosses and assistants	Miners	Miners' laborers	Drivers and runners	Doorboys and helpers	Pumpmen	Company men	All other employes	Total inside	Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Slatepickers (boys)	Slatepickers (men)	Bookkeepers and clerks	All other employes	Total outside				
Ledgh Valley Coal Co. ....	Luzerne, .....	11	25	.....	994	463	331	18	49	375	.....	2,282	3	5	87	112	54	14	17	446	738	3,020			
Kingston Coal Co., .....	Lackawanna, .....	2	5	12	343	270	152	22	12	33	137	988	1	2	48	45	.....	53	5	236	390	1,378			
Forty Feet Coal Co., .....	.....	2	3	11	479	279	165	37	18	26	124	1,149	1	1	25	24	61	57	5	131	318	1,467			
Mt. Lookout Coal Co., .....	.....	2	.....	4	247	144	25	11	10	9	94	546	1	1	14	24	9	13	3	87	162	768			
Plymouth Coal Co., .....	.....	1	2	.....	100	79	46	14	5	80	30	360	.....	1	9	19	18	8	2	56	113	473			
Ramb Coal Co., .....	.....	3	.....	.....	139	73	38	9	8	7	28	306	1	2	9	17	22	8	3	57	119	425			
Delaware, Lackawanna and Western Railroad Co., .....	Luzerne, .....	1	.....	3	73	75	19	4	2	2	72	251	.....	1	4	11	.....	.....	1	21	38	289			
East Boston Coal Co., .....	.....	1	3	2	50	27	64	13	8	63	6	237	1	2	14	18	7	14	5	64	125	362			
Rissinger Brothers and Co., Incorporated, .....	.....	1	.....	.....	15	14	7	1	1	4	3	46	1	1	4	3	12	5	1	4	31	77			
Clear Spring Coal Co., .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	2	.....	.....	1	25	30	30			
Totals, .....	.....	27	51	26	2,440	1,424	847	129	113	599	499	6,165	10	17	215	287	183	182	43	1,127	2,064	8,229			



TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked in Breaker											
		January	February	March	April	May	June	July	August	September	October	November	December
Lehigh Valley Coal Co., .....	{ Luzerne,..... Lackawanna, }	24	23	23	.....	5	21	22	22	20	21	22	20
Kingston Coal Co., .....		25	24	25	.....	6	25	26	24	24	26	24	24
Forty Fort Coal Co., .....	{ Luzerne,..... Lackawanna, }	23	23	24	.....	3	19	30	30	19	17	19	18
Mt. Lookout Coal Co., .....		23	22	23	.....	6	34	25	24	22	23	23	22
Plymouth Coal Co., .....		23	23	25	.....	6	21	31	24	22	23	22	22
Raub Coal Co., .....		20	19	22	.....	4	18	21	23	20	23	22	22
Delaware, Lackawanna and Western Railroad Co., .....		24	25	25	.....	8	23	24	25	23	26	24	23
East Boston Coal Co.,* .....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Risinger Brothers and Co., Incorporated, .....		20	21	22	.....	.....	16	12	.....	14	19	17	19
Total													
December													
November													
October													
September													
August													
July													
June													
May													
April													
March													
February													
January													

\*East Boston Colliery idle; rebuilding breaker.

TABLE 4.—Fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 6	John Houck, .....	Italian, .....	Laborer, .....	27	S.	....	....	Harry E., .....	Luzerne, .....	Fatally injured by fall of roof at face of chamber.
15	John Maroska, .....	Italian, .....	Laborer, .....	40	M.	1	....	Kingston No. 4, .....	Luzerne, .....	Instantly killed by being run over by railroad cars at breaker. Outside.
Feb. 6	Frank Strubchesky, .....	Polish, .....	Miner, .....	35	M.	1	4	William A., .....	Lackawanna, .....	Instantly killed by fall of roof in an old chamber while testing roof.
13	Charles Miklowsky, .....	Polish, .....	Miner, .....	31	M.	1	2	Exeter, .....	Luzerne, .....	Instantly killed by fall of roof at face of chamber.
16	Zigmunt Karshulsky, .....	Polish, .....	Laborer, .....	22	S.	....	....	Kingston No. 4, .....	Luzerne, .....	Instantly killed by cars on slope while riding on them. The chain broke.
29	John Motchock, .....	Italian, .....	Laborer, .....	38	M.	1	3	Black Diamond, .....	Luzerne, .....	Killed by fall of roof on main road.
March 1	Charles Aximitus, .....	Polish, .....	Laborer, .....	25	S.	....	....	Forty Fort, .....	Luzerne, .....	Instantly killed by explosion of powder near face of heading. He was breaking into miner's tool box when he exploded powder in box.
4	John Naperskie, .....	Polish, .....	Miner, .....	44	S.	....	....	Maltby, .....	Luzerne, .....	Killed by blast at face of chamber.
20	Frank Bartosavich, .....	Polish, .....	Laborer, .....	21	S.	....	....	Mt. Lookout, .....	Luzerne, .....	Killed by fall of roof at face of chamber.
26	Faron Mazareno, .....	Italian, .....	Miner, .....	32	M.	1	2	Mt. Lookout, .....	Luzerne, .....	Fatally injured by explosion of powder at face of chamber. He was using mixed powders and a detonator in charge.
28	Anthony Remushik, .....	Polish, .....	Laborer, .....	25	S.	....	....	Kingston No. 4, .....	Luzerne, .....	Fatally injured by flying coal from a blast near face of chamber.
31	Steve Makar, .....	Russian, .....	Fireman, .....	24	M.	1	2	East Boston, .....	Luzerne, .....	Fatally injured. Scalded by steam in boiler house. Outside.
April 19	Edward Myers, .....	American, .....	Laborer, .....	60	M.	1	....	Exeter, .....	Luzerne, .....	Fatally injured while oiling machinery. Outside.
May 25	Andrew Grabski, .....	American, .....	Slatepicker, .....	16	S.	....	....	East Boston, .....	Luzerne, .....	Fatally injured by being run over by railroad cars at washery. Outside.
	Julius Griska, .....	Lithuanian, .....	Laborer, .....	22	S.	....	....	Exeter, .....	Luzerne, .....	Killed by fall of coal at face of cross-heading.
27	Stanley Smith, .....	Polish, .....	Driver, .....	19	S.	....	....	Pettebone, .....	Luzerne, .....	Fatally injured by explosion of gas on mainway.
June 3	David Thomas, .....	Welsh, .....	Miner, .....	49	M.	1	....	William A., .....	Lackawanna, .....	Killed by fall of roof while making repairs on engine plane.

June	12	Jake Boxis, .....	Lithuanian, .....	Laborer, .....	39	S. M.	1	....	Stevens, .....	Luzerne, .....	Killed by fall of roof at face of pillar.
July	18	William T. Griffiths, ..	Welsh, .....	Shaftman, ...	55	M.	1	....	Kingston No. 4, ..	Luzerne, .....	Killed by falling down shaft when platform gave way.
	19	George Lewis, .....	Lithuanian, .....	Miner, .....	42	M.	1	3	Seneca, .....	Luzerne, .....	Killed by fall of roof at face of chamber.
		Nicholas Arbutin, ...	Polish, .....	Laborer, .....	18	S.	....	....	Black Diamond, ..	Luzerne, .....	Fatally injured by fall of roof on gangway while making repairs.
		Peter Berlocce, .....	Italian, .....	Miner, .....	35	M.	1	2	Westmoreland, ..	Luzerne, .....	Killed by explosion of dynamite at face of gangway.
Aug.	6	Stanley Yotchsky, ..	Polish, .....	Miner, .....	43	M.	1	1	Exeter, .....	Luzerne, .....	Killed by fall of rock and bone at face of chamber.
	16	Nello Beniforti, .....	Italian, .....	Miner, .....	31	S.	....	....	Exeter, .....	Luzerne, .....	Killed by blast while re-opening a hole at face of chamber.
Sept.	5	Frank Prostick, .....	Polish, .....	Miner, .....	42	M.	1	....	Mt. Lookout, ....	Luzerne, .....	Killed by fall of roof at face of chamber.
	16	John Yansavage, ....	Lithuanian, .....	Miner, .....	47	M.	1	6	Louise, .....	Luzerne, .....	Killed by flying coal from a shot on old gangway.
	19	Anthony Montroka, ....	Slavonian, ..	Doortender, ..	42	M.	1	7	Maltby, .....	Luzerne, .....	Fatally injured by cars on gangway.
	24	Barney Ludwinociz, ..	Polish, .....	Miner, .....	34	M.	1	4	Maltby, .....	Luzerne, .....	Killed by fall of coal at face of chamber.
Oct.	11	Casper Miller, .....	Polish, .....	Laborer, .....	26	S.	....	....	Harry E., .....	Luzerne, .....	Fatally injured by fall of rock at face of chamber.
	14	Fred Toni, .....	Italian, .....	Miner, .....	36	M.	1	1	Westmoreland, ..	Luzerne, .....	Killed by fall of roof at face of chamber.
Nov.	22	John Micnovitch, ....	Polish, .....	Laborer, .....	30	S.	....	....	Kingston No. 4, ..	Luzerne, .....	Killed by fall of roof at face of airway.
	25	John Kilko, .....	Slavonian, ..	Driver, .....	20	S.	....	....	Kingston No. 4, ..	Luzerne, .....	Fatally injured by cars on main road.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 9	Jesse Pamphila, ....	Italian, ....	Laborer, ....	29	S.	William A., ....	Lackawanna, ..	Leg broken by fall of coal at face of pillar.
11	William Drugalis, ...	Polish, ....	Miner, ....	62	M.	William A., ....	Lackawanna, ..	Internally injured by fall of roof at face of pillar.
22	Charles Kosnack, ....	Russian, ....	Laborer, ....	18	S.	Kingston No. 4, ....	Luzerne, .....	Compound fracture of leg, caused by being struck by falling set of timber at face of chamber.
26	Nick Yarrowman, ...	Slavonian, ..	Louder, ....	41	M.	Soneca, ....	Luzerne, .....	Chest crushed by railroad cars at breaker, outside.
28	John Covack, ....	Polish, ....	Propman, ....	34	M.	Soneca, ....	Luzerne, .....	Legs broken by prop timber rolling upon him while unloading it. Outside.
Feb. 12	Quantille Permanie, ..	Italian, ....	Miner, ....	35	M.	Westmoreland, ....	Luzerne, .....	Hip dislocated by fall of roof at face of chamber.
15	Frank Scott, ....	American, ..	Runner, ....	26	S.	Forty Fort, ....	Luzerne, .....	Squeezed by cars on gangway.
27	Sam. Fohart, ....	Italian, ....	Laborer, ....	27	M.	Harry E., ....	Luzerne, .....	Chest injured by fall of roof at face of chamber.
28	Jake Pollock, ....	Polish, ....	Laborer, ....	21	S.	Maltby, ....	Luzerne, .....	Loss of hand and both eyes by explosion of dynamite while nailing a stick of dynamite to a prop at face of chamber. It was supposed he drove the nail into the detonator.
March 11	Alex. Buginski, ....	Polish, ....	Laborer, ....	19	S.	Black Diamond, ....	Luzerne, .....	Collar bone and ribs broken by cars on gangway.
14	John Wisniewski, ...	Polish, ....	Miner, ....	50	M.	Forty Fort, ....	Luzerne, .....	Leg broken by fall of roof at face of chamber.
23	Frank Cheskiele, ....	Polish, ....	Miner, ....	38	S.	Mt. Lookout, ....	Luzerne, .....	Leg broken by fall of roof at face of chamber.
26	Anthony Becker, ....	Polish, ....	Runner, ....	20	S.	Kingston No. 4, ....	Luzerne, .....	Leg cut off by falling between cars on gangway.
May 27	Philip Sheridan, ....	American, ..	Driver, ....	20	S.	Black Diamond, ....	Luzerne, .....	Left side injured by cars on gangway.
28	Charles Degosiecc, ...	Polish, ....	Driver, ....	19	S.	Pettebone, ....	Luzerne, .....	Severely burned by explosion of gas on mainway.
28	John Mouroe, ....	American, ..	Miner, ....	39	M.	Maltby, ....	Luzerne, .....	Injured by coal flying from a shot at face of gangway.
	Paul Yacobitz, ....	German, ....	Laborer, ....	61	M.	Louise, ....	Luzerne, .....	Leg broken by being struck by rope on engine plane.

May	29	Paul Shine, .....	Slavonian, ..	Laborer, ..	21	S. Malthy, .....	Luzerne, .....	Left foot injured by fall of roof at face of chamber.
		William Kulas, .....	Polish, .....	Miner, .....	67	S. Seneca, .....	Luzerne, .....	Injured by coal dying from a blast at face of chamber.
June	4	Toney Rean, .....	Italian, .....	Footman, .....	53	M. Seneca, .....	Luzerne, .....	Leg amputated by cars at foot of breaker hoist. Outside.
	12	Andro Corilla, .....	Slavonian, ..	Laborer, .....	22	M. Mt. Lookout, .....	Luzerne, .....	Ankle dislocated by fall of roof at face of chamber.
	28	George Barnyard, .....	Slavonian, ..	Footman, .....	23	S. Malthy, .....	Luzerne, .....	Severely injured by cars on gangway.
		Peter Venzine, .....	Polish, .....	Laborer, .....	23	S. William A., .....	Lackawanna, ..	Severely injured by fall of coal at face of chamber.
July	5	Joseph Krupenskie, ..	Polish, .....	Driver, .....	20	S. Forty Fort, .....	Luzerne, .....	Leg broken by cars on gangway.
	6	Peter Cerenges, .....	Lithuanian, ..	Laborer, .....	29	M. William A., .....	Lackawanna, ..	Small bone in leg broken by fall of roof at face of chamber.
	27	John Siroba, .....	Austrian, .....	Miner, .....	34	M. Louise, .....	Luzerne, .....	Leg broken by fall of roof at face of pillar.
Aug.	7	Alex. Milsyskie, .....	Polish, .....	Miner, .....	26	M. Louise, .....	Luzerne, .....	Arm crushed by cars. He was riding on a trip of loaded cars and in attempting to get off he fell under the cars.
	28	Robert Hominack, ..	American, ..	Engineer, .....	30	S. Malthy, .....	Luzerne, .....	Leg broken by fall of rock on main road.
Sept.	3	Henry Forka, .....	Slavonian, ..	Laborer, .....	53	M. William A., .....	Lackawanna, ..	Leg broken by cars. Outside.
	19	Mike Layous, .....	Hungarian, ..	Miner, .....	25	M. Black Diamond, .....	Luzerne, .....	Hip dislocated by fall of coal at face of pillar.
Oct.	3	Joe Rubeleskie, .....	Polish, .....	Miner, .....	23	S. Mt. Lookout, .....	Luzerne, .....	Spine fractured by fall of roof at face of chamber.
	16	James Triggan, .....	American, ..	Engineer, .....	24	S. Black Diamond, .....	Luzerne, .....	Arm fractured while handling a piece of steel roofing on gangway.
	24	Anthony Kunya, .....	Slavonian, ..	Miner, .....	46	M. Malthy, .....	Luzerne, .....	Injured by explosion of dynamite at face of chamber.
	26	Joe Smith, .....	Polish, .....	Footman, .....	22	M. Louise, .....	Luzerne, .....	Leg and arm cut off by being struck by runaway car on slope.
Nov.	11	Stanley Mickachonis, ..	Polish, .....	Driver, .....	18	S. Louise, .....	Luzerne, .....	Ankle fractured by cars near mouth of tunnel.
	22	George Wancha, .....	Polish, .....	Driver, .....	26	S. Exeter, .....	Luzerne, .....	Leg fractured by fall of roof at face of chamber.
	23	John Mandish, .....	Lithuanian, ..	Laborer, .....	17	S. Harry E., .....	Luzerne, .....	Fingers crushed by cars on gangway.
	27	Berti Silva, .....	Italian, .....	Miner, .....	23	S. Malthy, .....	Luzerne, .....	Hip fractured by fall of roof at face of chamber.
	27	John Cican, .....	Slavonian, ..	Laborer, .....	26	S. Forty Fort, .....	Luzerne, .....	Back and hips injured by fall of rock at face of chamber.
Dec.	12	William A. Pifer, .....	American, ..	Fire boss, .....	21	S. Seneca, .....	Luzerne, .....	Shoulder dislocated by fall of rock at face of gangway.
	13	Walter Bigonski, .....	Polish, .....	Miner, .....	58	M. Black Diamond, .....	Luzerne, .....	Seven ribs broken by cars on haulage road.
	19	John Metickonis, .....	Lithuanian, ..	Driver, .....	39	M. Black Diamond, .....	Luzerne, .....	Leg cut off by fall of rock at face of chamber.
	28	Edward Glogell, .....	English, ..	Footman, .....	18	S. Kingston No. 4, .....	Luzerne, .....	Compound fracture of leg. While spragging car on gangway it became derailed and caught his leg.
		Ben Intermezzo, .....	Italian, .....	Laborer, .....	23	M. Westmordland, .....	Luzerne, .....	Forearm fractured by mine cars becoming derailed at foot of slope.
					41	M. William A., .....	Lackawanna, ..	Forearm band fractured by mine cars on rock bank. Outside.



## CONDITION OF COLLIERIES

## LEHIGH VALLEY COAL COMPANY

Exeter, Seneca, Maltby, Westmoreland and Stevens Collieries.—Ventilation, drainage and general condition as to safety, good.

William A. Colliery.—Ventilation and drainage good. Condition as to safety, fair. The principal work at this colliery is the removal of pillars.

## KINGSTON COAL COMPANY

Kingston No. 4 Colliery.—Ventilation, drainage and general condition as to safety, good.

## FORTY FORT COAL COMPANY

Harry E. and Forty Fort Collieries.—Ventilation, drainage and general condition as to safety, good.

## MT. LOOKOUT COAL COMPANY

Mt. Lookout Colliery.—Ventilation, drainage and condition as to safety, good.

## PLYMOUTH COAL COMPANY

Black Diamond Colliery.—Ventilation, drainage and general condition as to safety, good.

## RAUB COAL COMPANY

Louise Colliery.—Ventilation, drainage and condition as to safety, fair.

## DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Pettebone Colliery.—Ventilation, drainage and condition as to safety, good.

## EAST BOSTON COAL COMPANY

East Boston Colliery.—Ventilation, drainage and condition as to safety, good.

## RISSINGER BROTHERS AND COMPANY, INCORPORATED

Troy Colliery.—Ventilation, drainage and condition as to safety, fair.

## IMPROVEMENTS

## LEHIGH VALLEY COAL COMPANY

Exeter Colliery.—Inside: An 18-degree rock plane 360 feet long was driven from Marcy vein to Pittston vein, for the purpose of removing the pillars in Pittston vein. A 15-degree rock plane 150 feet long was driven from Top Red Ash vein to Clarke vein, for a balance

plane. An additional 10-ton compressed air motor was installed in Checker vein. Ten additional concrete stalls were added to the mule barn in Checker vein.

Outside: The erection of the 463 horse power Sterling boiler mentioned in last year's report was completed and work commenced on an additional 463 horse power Sterling boiler. An 8-inch bore hole was drilled from surface to Red Ash vein to be used for slushing ashes from the boiler house. A 10-inch bore hole was drilled from surface to the Red Ash vein for silting purposes. New drums were put on the Pittston Shaft hoisting engines, and Welch overwinding devices were installed on both the Pittston and Marcy shaft hoisting engines.

Maltby Colliery.—Inside: No. 8 rock plane, 230 feet long, was driven on a 30-degree pitch from Ross vein to Nine Foot vein, No. 6 slope, to be used for a second opening. Completed Marcy vein mule barn, which is built of concrete and is fireproof throughout.

Outside: The wooden cribbing in the intake and return air shafts was removed and replaced with concrete. Extensive repairs were made to the main timbers in the breaker and 3 additional Lehigh Valley jigs installed.

William A. Colliery.—Inside: No. 24 slope was driven a distance of 1,000 feet and connection made to the Phoenix old workings north of the fault in the Fifth vein. Electric haulage in Middle Red Ash vein was extended about 3,200 feet. An air shaft was put down to Clarke vein at No. 10 tunnel, to be used as a second opening for this vein.

Outside: On August 25, the engine house at No. 10 tunnel was destroyed by fire. It has been replaced with a fireproof building of tile. The 6-foot diameter fan at No. 10 tunnel has been replaced by an 8-foot fan. A Welch overwinding device was installed on the shaft hoisting engines at William A. shaft.

Seneca Colliery.—Inside: No. 15 rock tunnel was driven through the anticlinal 280 feet long for a second opening. No. 8 rock plane, 68 feet long, was driven from Clarke vein to Marcy vein for a second opening. No. 15 slope, Marcy vein, was graded through the anticlinal a distance of 52 feet and steel timber put in for roof support.

Outside: On June 28, the two 20-foot ventilating fans at the Twin shaft were destroyed by fire. These fans have been replaced with a 24-foot steel fan of the Guibal type, propelled by an 18 by 30 inch 4 valve rotary Vulcan engine, in a fireproof building of concrete and steel. The 3,000 horse power boiler plant mentioned in last year's report was completed. It contains 6 batteries of 2 drum Sterling boilers, each battery having a capacity of 501 horse power. The engine room contains one 4,000 horse power Cochran heater, two 7 by 12 inch Goyne feed water pumps, and a 12-foot Sturtevant blast fan, propelled by a 16 by 18 inch Vulcan engine; the building, 28 feet by 183 feet 6 inches, is constructed of brick with a steel roof. An electric driven conveyor line of steel construction was built from the breaker to the new boiler house to supply boiler fuel. A concrete subway was constructed under the main line of the Lehigh Valley Railroad at Coxey shaft to provide a safe traveling way for men who are employed in and about the breaker. The old power house at Coxey shaft was torn down and replaced with a building of tile construction. An additional equipment was also installed

consisting of one 18 by 30 inch McEwen engine and generator, capacity 700 amperes at 250 volts. The wooden tower over Coxey shaft was replaced with a steel tower and the hoisting engines were changed. A Welch overwinding device was put on the hoisting engines at the Twin shaft. Completed the 17-inch bore hole through which the pump in the Marcy vein, No. 5 slope, delivers water to the surface.

Westmoreland Colliery.—Inside: A 6-ton electric motor was installed in Marcy vein.

Outside: Built a concrete arch at the mouth of No. 1 tunnel; also a wash house of tile construction, equipped with shower baths and lockers.

#### KINGSTON COAL COMPANY

Kingston No. 4 Colliery.—No. 1 Shaft, Inside: Tunnel 200 feet long was driven from Cooper vein to Orchard vein, No. 1 slope. Tunnel 500 feet long was driven from Lance vein to Orchard vein, No. 3 slope. Two tunnels, each 75 feet long, were driven from Lance vein to Cooper rock plane. A tunnel was driven from Checker vein pump room, No. 1 shaft, to connect with No. 4 shaft. Connection was made from No. 6 slope to No. 3 slope in Bennett vein. No. 3 slope is now being used as a traveling way. A new manway was constructed along No. 3 Orchard slope. A new main airway completed from the lower dip workings in No. 1 shaft to No. 6 fan. A new silt line 4,800 feet long was laid from Orchard vein, through Lance and Cooper veins, into the lower level workings in the center of the property.

No. 4 Shaft. Inside: New concrete retaining walls were built between the foot of the shaft and the pump room. Two 4-inch bore holes were drilled from Ross vein to Red Ash vein for silting purposes and one 2-inch hole from Bennett vein to Checker vein for drainage purposes. Silting was carried on extensively during the year in Ross and Red Ash veins.

Outside: A new 8-inch steam line was erected from No. 4 boiler house to No. 2 bore hole fans. Engines and boiler plant at the latter place were dispensed with. Railroad yard facilities were increased for shipping coal over the Lehigh Valley Railroad. Three new air receivers were installed at compressor plant. Erected a 25,000 gallon water tank opposite the boiler house for No. 4 washery.

#### FORTY FORT COAL COMPANY

Forty Fort Colliery.—Inside: An 8 by 12-inch duplex double-acting pump, driven by a 75-horse power motor, operated by alternating current at 440 volts, was installed in Six Foot vein near the head of Six Foot slope, to pump water from that point to the surface and an 8 by 12-inch triplex, single-acting pump, operated by a 20-horse-power electric motor, was installed in South slope, Six Foot vein, to pump water from the slope to the pumping station near the head of the slope, and 1,500 feet of 6-inch wrought iron column pipe laid between these two pumps. A 22-horse power electric hoist was installed in Four Foot vein, South slope section, and electric hoist was installed to operate the South slope. The object in installing



this electric equipment was to abandon the boiler and compressed air plant, which supplied the lower workings of Forty Fort and Harry E collieries with power, and which was very expensive to operate and maintain.

The barns, engine rooms, pump rooms, etc., inside are constructed of concrete and steel and are strictly fireproof. A shaft, 6 by 6 feet and 50 feet deep, was sunk between the overlap in Four Foot vein, connecting No. 3 slope Four Foot workings with South slope Four Foot workings. This is an additional opening for the South slope section and will afford more efficient ventilation for this section. A rock plane was driven on a 30 degree pitch between the Eleven Foot and Six Foot veins, a distance of 210 feet, for the purpose of making an additional opening for the Six Foot vein workings.

Outside: No. 1 air shaft was retimbered, the airway between the shaft and fan rebuilt, and the fan and fan house substantially repaired. Twelve new jigs of the plunger type were installed in the breaker. The Jackson tunnel, which is used as a waterway for the Six Foot old workings above the shaft level, was opened up and retimbered a distance of 257 feet. This tunnel is now 8 by 18 feet. A telephone system was installed connecting the office outside with the Eleven Foot, Six Foot and Four Foot veins.

Harry E. Colliery.—Inside.—One 8 by 12-inch duplex double-acting plunger pump, operated by a 20-horse power electric motor, was installed in a fireproof building of concrete and steel on No. 38 lift. Red Ash vein, and two 8 by 12-inch duplex double-acting plunger pumps are operated by 75-horse power electric motors, were installed on No. 32 lift in a building constructed of concrete with steel for roof supports. Installed one centrifugal pump, with 3-horse power electric motor in No. 24 lift dip; and three 22-horse power electric hoists, one in No. 28 lift, one in No. 24 lift and one in No. 24 intermediate lift. 3,210 feet of extra heavy cast iron flanged pipe laid from No. 19 to No. 32 lift; 750 feet of 8-inch wrought iron pipe laid from No. 32 to No. 38 lift; 2,000 feet of 6-inch wood pipe laid to carry silt to the lower workings in Red Ash vein. A pair of 13 by 18-inch hoisting engines installed at the head of Eleven Foot slope to replace the old engines, which were inadequate to do the work. A rock plane, 6 by 8 feet, 90 feet long, was driven on a 45-degree pitch between Six and Four Foot seams, for a second opening and to improve the ventilation.

All engine houses, stables and pump rooms inside are constructed in a substantial manner of concrete with steel supports.

Outside: A contract was made with the Luzerne County Gas and Electric Company to supply Harry E. and Forty Fort collieries with electric current. A brick building 12 by 12 feet was erected over a bore hole formerly used to supply the Red Ash workings with compressed air, for a sub-station where the Electric Company delivers the current at a voltage of 6,600 volts and it is transformed to 440 volts for use at the colliery. A similar sub-station was erected in the old compressor house to supply the Forty Fort workings with power. A telephone system was installed connecting the outside with the Red Ash and Ross veins.

#### MT. LOOKOUT COAL COMPANY

Mount Lookout Colliery.—Inside: All timber supports were removed from the main pump room in Pittston vein and replaced with

H section steel columns and concrete. A new mine hospital was constructed in Marcy vein of fireproof material and fully equipped with the necessary appliances. A Jeffrey electric under-cutting machine has been placed in Ross vein, with very satisfactory results. A mule barn, with concrete floors, steel mangers and cast iron feed boxes and water troughs, was constructed in the Marcy vein, to accommodate 32 mules.

Outside: A pair of 14 by 20-inch Vulcan hoisting engines installed on the surface to operate Ross slope inside. The engines replace the Flory engines formerly used, which were inadequate to do the work. A complete telephone system was installed connecting the outside office with all the veins and slopes.

#### PLYMOUTH COAL COMPANY

Black Diamond Colliery.—Inside: Built concrete and steel engine room at the head of the slope in Red Ash vein and concrete and steel stable in Red Ash vein. Retimbered Red Ash plane engine house with steel timbers and iron lagging. Built concrete and steel stable in Ross vein; concrete and steel engine room at the head of the slope in Ross vein; concrete and steel pump room in the Bennett vein, and concrete and steel stable in Cooper vein. Installed a 24 by 10 by 24-inch Scranton steam pump in Bennett vein and a 16 by 8 by 18-inch Scranton steam pump in Red Ash slope; also one 5-ton General Electric Company motor with the necessary wiring and bonding to operate it in Bennett vein.

Outside: Installed one General Electric continuous current, 100 K. W. 400 amperes, 250 volt generator, driven by a General Electric 60 cycle 150 horse power 440 volt motor. An electric power house constructed of brick, 26 feet by 14 feet by 12 feet, was also completed. Installed one 500 horse power two-drum water tube Babcock and Wilcox boiler, enclosed in a fireproof brick boiler room with corrugated iron roof and iron doors. Constructed a pump room of concrete and steel with corrugated iron roof and door. Installed one 16 by 8 by 18-inch duplex Scranton steam pump for boiler feed. Installed three Anthracite Spiral slate-picking machines and one Emery slate-picking machine in breaker.

#### DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Pettebone Colliery.—Inside: The second opening from Hillman vein to Kidney vein, which was mentioned in last year's report, has been completed. The work of rebuilding mule barns, pump rooms, hoist rooms, etc., with incombustible material, is completed.

#### EAST BOSTON COAL COMPANY

East Boston Colliery.—Inside: The foot of the shaft was made fireproof by the use of concrete and steel supports. The mule barn, hospital and pump room in Red Ash vein were built of concrete with steel supports. The slope engine room was also built of concrete with steel supports. There were 43 sets of steel timber placed in Red Ash and Ross veins to take the place of wood. The Ross slope engine



room, and the barn and hospital in Cooper vein were also constructed of concrete. Airways and shafts in Bennett and Cooper veins were concreted and put in very good condition.

Outside: A new breaker, with machinery complete, was erected to take the place of the old one destroyed by fire. The breaker is erected away from the shaft and is connected to the steel hoisting tower by means of a steel trestle 205 feet long. The hoisting shaft and air shaft have been concreted from the rock to the surface. A new concrete car repair and machine shop, a concrete office, a concrete retaining wall around shaft and shop, and two concrete hoppers—one for coal and one for ashes at the boiler room—have also been constructed. Built 6,200 feet of railroad tracks with switches, and installed two new track scales and one wagon scale. Put down two 6 inch bore holes for flushing purposes.



## NINTH DISTRICT

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LUZERNE COUNTY

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Wilkes-Barre, Pa., February 2, 1913.

Hon. James E. Roderick,

Chief of Department of Mines.

Sir: I have the honor to transmit herewith my Annual Report as Inspector of Mines for the Ninth Anthracite District, for the year ending December 31, 1912.

The report contains the statistical information required by law, a brief description of fatal and non-fatal accidents, and a brief description of the general condition of the mines.

Respectfully submitted,

D. T. DAVIS,  
Inspector.

## SUMMARY OF STATISTICS

Number of collieries, .....	16
Number of mines, .....	41
Number of mines in operation, .....	41
Number of tons of coal shipped to market, .....	4,543,375
Number of tons used at mines for steam and heat, .....	418,939
Number of tons sold to local trade and used by employes, ..	158,445
Number of tons produced, .....	5,120,759
Number of tons produced by compressed air machines, ..	.....
Number of tons produced by electrical machines, .....	.....
Number of persons employed inside of mines, .....	8,156
Number of persons employed outside, .....	2,395
Number of fatal accidents inside of mines, .....	39
Number of fatal accidents outside, .....	3
Number of non-fatal accidents inside of mines, .....	26
Number of non-fatal accidents outside, .....	7
Number of tons of coal produced per fatal accident inside, ..	131,302
Number of tons produced per fatal accident outside, ....	1,706,920
Number of tons produced per fatal accident inside and out- side, .....	121,923
Number of persons employed per fatal accident inside, ..	209
Number of persons employed per fatal accident outside, ..	798
Number of persons employed per fatal accident inside and outside, .....	251
Number of persons employed per non-fatal accident inside, ..	314
Number of persons employed per non-fatal accident out- side, .....	342
Number of persons employed per non-fatal accident inside and outside, .....	320
Number of wives made widows, .....	27
Number of children made orphans, .....	67
Number of steam locomotives used inside of mines, .....	1
Number of steam locomotives used outside, .....	13
Number of compressed air locomotives used inside, .....	5
Number of compressed air locomotives used outside, ....	.....
Number of electric motors used inside, .....	23
Number of electric motors used outside, .....	.....
Number of fans in use, .....	37
Number of furnaces in use, .....	.....
Number of gaseous mines in operation, .....	29
Number of non-gaseous mines in operation, .....	12
Number of new mines opened, .....	10
Number of old mines abandoned, .....	1

## TABLE A

## PRODUCTION OF COAL

Names of Operators	Tons
Kingston Coal Company, .....	1,157,016
Delaware and Hudson Company, .....	1,121,690
Lehigh and Wilkes-Barre Coal Company, .....	1,056,774
Delaware, Lackawanna and Western Railroad Company, .....	1,030,635
Parrish Coal Company, .....	466,039
Plymouth Coal Company, .....	131,008
George F. Lee Coal Company, .....	100,357
West Nanticoke Coal Company, .....	38,565
Bright Coal Company, .....	18,675
Total, .....	5,120,759

Production by Counties	
Luzerne, .....	5,120,759



TABLE B.—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employees inside	Number of employees outside	Total number of employees	Number of employees inside per fatal accident	Number of employees outside per fatal accident	Number of employees inside per non-fatal accident	Number of employees outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Kingston Coal Co. ....	9	1	10	12	3	15	128,557	82,384	1,683	466	2,149	187	496	.....	.....
Dalhousie and Hudson Co. ....	1	1	2	8	2	10	100,244	211,355	1,730	621	2,351	236	621	.....	207
Lehigh and Wilkes-Barre Coal Co. ....	6	.....	6	7	.....	7	155,129	.....	1,419	347	1,825	246	.....	296	174
Delaware, Lackawanna and Western Railroad Co. ....	7	1	8	1	.....	1	117,231	1,630,635	1,872	361	2,233	268	361	1,872	.....
Parrish Coal Co. ....	9	.....	9	9	1	10	51,282	77,633	301	365	1,106	9	.....	731	305
Plymouth Coal Co. ....	1	.....	1	1	1	2	131,008	.....	230	130	365	250	.....	250	135
Miscellaneous Companies, .....	.....	.....	.....	.....	.....	.....	.....	.....	81	130	411	.....	.....	.....	.....
Totals and averages for district, .....	30	3	42	26	7	33	131,331	196,972	8,156	2,395	10,551	209	798	314	342

TABLE C.—Classification of Fatal Accidents Inside and Outside of Mines

	Months												Totals	Percentages
	January	February	March	April	May	June	July	August	September	October	November	December		
Causes of Accidents Inside														
Falls of coal, .....		1					1					1	3	7.69
Falls of slate, .....			1										1	2.57
Falls of roof, .....	1				1							2	7	17.95
Mine cars, .....							3	1	1				7	17.95
Explosions of gas, .....	2		1				2		1				6	15.39
Explosions of powder and dynamite, .....	6												6	15.38
Blasts, premature and otherwise, .....	1					1							4	10.26
Falling into shafts, .....			2									1	2	5.13
Struck by lever, .....			1										1	2.56
Struck by timber, .....			1										1	2.56
Struck by rail, .....												1	1	2.56
Totals, .....	10	1	7		1	1	6	1	2		7	3	39	100.00
Causes of Accidents Outside														
Cars, .....		2									1		3	100.00
Totals, .....		2									1		3	100.00
Grand totals inside and outside, .....	10	3	7		1	1	6	1	2		8	3	42	.....

TABLE D.—Classification of Non-Fatal Accidents Inside and Outside of Mines

	Months												Totals	Percentages
	January	February	March	April	May	June	July	August	September	October	November	December		
Causes of Accidents Inside														
Falls of coal, .....	1									1			2	7.69
Falls of slate, .....										1			1	3.84
Falls of roof, .....						1	1				1		3	11.54
Mine cars, .....		1	2			1		1		1		1	7	26.92
Explosions of gas, .....							5						5	19.23
Explosions of powder and dynamite, .....			1			1							2	7.69
Blasts, premature and otherwise, .....			2										2	7.69
Mules, .....										1			1	3.85
Struck by rope, .....		1											1	3.85
Rush of culm, .....			1										1	3.85
By falling, .....				1									1	3.85
Totals, .....	1	2	6	1		3	6	1		4	1	1	26	100.00
Causes of Accidents Outside														
Cars, .....								1	2				3	42.86
Machinery, .....								2					2	28.57
By falling, .....			1									1	2	28.57
Totals, .....			1					3	2			1	7	100.00
Grand totals inside and outside, .....	1	2	7	1		3	6	4	2	4	1	2	33	.....

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Miners, .....	3	.....	4	.....	1	1	1	.....	1	.....	3	2	16
Miners' laborers, .....	1	1	3	.....	.....	.....	.....	1	.....	.....	2	1	10
Drivers and runners, .....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	2
Doorboys and helpers, .....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
Timbermen, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
Company men, .....	.....	.....	.....	.....	.....	.....	2	.....	1	.....	1	.....	6
Footmen, .....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
Tracklayers, .....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
Totals, .....	10	1	7	.....	1	1	6	1	2	.....	7	3	39
Outside													
Loading bosses, .....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Runners, .....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Laborers, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Totals, .....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	3
Grand totals inside and outside, .....	10	3	7	.....	1	1	6	1	2	.....	8	3	42

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Miners, .....	1	.....	4	.....	.....	2	2	.....	.....	2	1	.....	12
Miners' laborers, .....	.....	.....	1	1	.....	.....	1	.....	.....	.....	.....	.....	3
Drivers and runners, .....	.....	.....	.....	.....	.....	1	1	1	.....	2	.....	1	6
Doorboys and helpers, .....	.....	1	1	.....	.....	.....	1	.....	.....	.....	.....	.....	3
Footmen, .....	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	2
Totals, .....	1	2	6	1	.....	3	6	1	.....	4	1	1	26
Outside													
Slatepickers (boys), .....	.....	.....	1	.....	.....	.....	.....	2	.....	.....	.....	.....	3
Laborers, .....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	2
Barn-bosses, .....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1
Assistant fire bosses, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Totals, .....	.....	.....	1	.....	.....	.....	.....	3	2	.....	.....	1	7
Grand totals inside and outside, .....	1	2	7	1	.....	3	6	4	2	4	1	2	33

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months											
	Totals	December	November	October	September	August	July	June	May	April	March	February
American, .....	3	1	1	1	1	1	1	1	1	1	1	1
English, .....	2	1	1	1	1	1	1	1	1	1	1	1
Welsh, .....	5	1	1	1	1	1	1	1	1	1	1	1
Irish, .....	1	1	1	1	1	1	1	1	1	1	1	1
Polish, .....	16	1	2	1	1	1	3	1	1	3	2	3
Italian, .....	3	1	1	1	1	1	1	1	1	1	1	1
Slavonian, .....	2	1	1	1	1	1	1	1	1	1	1	1
Lithuanian, .....	6	1	1	1	1	1	1	1	1	1	1	1
Austrian, .....	1	1	1	1	1	1	1	1	1	1	1	1
Russian, .....	2	1	1	1	1	1	1	1	1	1	1	1
Swedish, .....	1	1	1	1	1	1	1	1	1	1	1	1
Totals, .....	42	3	8	2	1	6	1	1	1	7	3	10

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months											
	Totals	December	November	October	September	August	July	June	May	April	March	February
American, .....	10	1	1	1	1	2	1	1	1	3	1	1
English, .....	1	1	1	1	1	1	1	1	1	1	1	1
Welsh, .....	3	1	1	1	1	1	1	1	1	1	1	1
German, .....	2	1	1	1	1	1	1	1	1	1	1	1
Polish, .....	10	1	1	2	1	4	1	1	1	1	1	1
Slavonian, .....	2	1	1	1	1	1	1	1	1	1	1	1
Lithuanian, .....	3	1	1	1	1	1	1	1	1	1	1	1
Russian, .....	2	1	1	1	1	1	1	1	1	1	1	1
Totals, .....	33	2	1	4	2	4	6	3	1	7	2	1

TABLE I.—Operators and mines, kind of openings, type and size of fans, size of furnaces, volume of air produced by fan or furnace per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	Kind of opening	Gaseous or non-gaseous	Method of ventilation	Diameter of fan in feet and inches	Width of blades in feet and inches	Depth of blades in feet and inches	Number of revolutions per minute	Water gauge developed—in inches	Name of fan	Power used	Number of splits of air currents	Number of cubic feet of air per minute entering the mine at inlet	Total number of cubic feet of air per minute circulating in all the splits	Number of cubic feet of air per minute passing out at outlet	Number of persons employed inside
Kingston Coal Co. Kingston No. 2 Colliery: Kingston No. 3, ..... Kingston No. 2, ..... Kingston, ..... Kingston Nos. 41, 42, 43, 44, ..... Dodds Tunnel, ..... Gaylord Colliery: Gaylord, .....	Shaft, ... Shaft, ... Slope, ... Slope, ... Drifts, .. Tunnel, .. Slope, .....	Gaseous, ..	2 Fans, { ..... ..... ..... ..... ..... .....	21 25 ..... ..... ..... .....	6. 8. ..... ..... ..... .....	6.9 7.8 ..... ..... ..... .....	78 70 ..... ..... ..... .....	1.5 1.3 ..... ..... ..... .....	{ Guibal, ... ..... ..... ..... ..... .....	Steam, ..... ..... ..... ..... ..... .....	20 ..... ..... ..... ..... .....	316,200 ..... ..... ..... ..... .....	268,600 ..... ..... ..... ..... .....	341,500 ..... ..... ..... ..... .....	1,280 ..... ..... ..... ..... .....
	.....	Non-gas, ..	Fan, ..... ..... ..... ..... ..... .....	25 ..... ..... ..... ..... .....	80 ..... ..... ..... ..... .....	8.0 ..... ..... ..... ..... .....	60 ..... ..... ..... ..... .....	1.1 ..... ..... ..... ..... .....	Guibal, ... ..... ..... ..... ..... .....	Steam, ..... ..... ..... ..... ..... .....	8 ..... ..... ..... ..... .....	122,200 ..... ..... ..... ..... .....	117,000 ..... ..... ..... ..... .....	117,000 ..... ..... ..... ..... .....	403 ..... ..... ..... ..... .....
	.....	Gaseous, ..	3 Fans, { ..... ..... ..... ..... .....	23 17 17 ..... .....	10 5 5 ..... .....	7.6 4. 4. ..... .....	60 90 45 ..... .....	2.2 1.2 .2 ..... .....	{ Guibal, ... ..... ..... ..... .....	Steam, ..... ..... ..... ..... .....	13 ..... ..... ..... .....	287,000 ..... ..... ..... .....	243,000 ..... ..... ..... .....	337,000 ..... ..... ..... .....	616 ..... ..... ..... .....
	.....	Gaseous, ..	{ Fan, ... Fan, ... Fan, ... ..... .....	22 17 22 ..... .....	5 5 5 ..... .....	6.6 4. 6.6 ..... .....	85 100 75 ..... .....	.3 .7 .2 ..... .....	{ Guibal, ... ..... ..... ..... .....	Steam, ..... ..... ..... ..... .....	19 ..... ..... ..... .....	413,900 ..... ..... ..... .....	335,000 ..... ..... ..... .....	465,000 ..... ..... ..... .....	669 ..... ..... ..... .....
	.....	Gaseous, ..	2 Fans, { ..... ..... ..... .....	23 22 ..... .....	10 5 ..... .....	7.6 6.6 ..... .....	71 80 ..... .....	3.4 2.1 ..... .....	{ Guibal, .. ..... ..... .....	Steam, ..... ..... ..... .....	14 ..... ..... .....	290,000 ..... ..... .....	265,000 ..... ..... .....	330,000 ..... ..... .....	541 ..... ..... .....
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Delaware and Hudson Co. Plymouth No. 3 Colliery: Plymouth, ..... Plymouth, ..... Plymouth, ..... Plymouth No. 5 Colliery: Plymouth, ..... Plymouth No. 4, ..... Boston, ..... Plymouth No. 2 Colliery: Plymouth, .....	Shaft, ... Shaft, ... Slope, ... Slope, ... Shaft, ... Shaft, ... Shaft, ... Shaft, ... Shaft, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

†A portion of the current screens through abandoned inaccessible workings to caves on crop lines.





TABLE I—Continued

Names of Operators and Mines	Kind of opening		Gaseous or non-gaseous	Method of ventilation		Diameter of fan in feet and inches	Width of blades in feet and inches	Depth of blades in feet and inches	Number of revolutions per minute	Water gauge developed—in inches	Name of fan	Power used	Number of splits of air currents	Number of cubic feet of air per minute entering the mine at inlet	Total number of cubic feet of air per minute circulating in all the splits	Number of cubic feet of air per minute passing out at outlet	Number of persons employed inside
	Tunnel, . . . Drift, . . . Slope, . . . }	Slope, . . . }		Non-gas., . . . Natural, . . .	Non-gas., . . . Fan, . . . .												
West Nanticoke Coal Co. West Nanticoke Colliery:	Tunnel, . . . Drift, . . . Slope, . . . }	Slope, . . . }	Non-gas., . . .	Non-gas., . . . Natural, . . .	10	4	2				Guilford, . . .	Steam, . . . .	1	70,000	70,000	70,000	29
West Nanticoke, . . . . .																	
Bright Coal Co. Hillside Colliery:	Tunnel, . . . Drift, . . . Slope, . . . }	Slope, . . . }	Non-gas., . . .	Non-gas., . . . Natural, . . .	10	4	2				Guilford, . . .	Steam, . . . .	1	70,000	70,000	70,000	29
Hillside, . . . . .																	

§New mine; just opening up from surface.

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	Name of General Superintendent	Post Office	Name of Superintendent	Post Office	Railroad to Mine
Kingston Coal Co. Kingston No. 2, ..... Gaylord Washery, ..... Delaware and Hudson Co. Plymouth Nos. 3, 5, 2 <sup>1</sup> , ..... Plymouth Washeries Nos. 3, 5, 2 <sup>1</sup> , .....	Luzerne, .....	F. E. Zerby, .....	Kingston, .....	{ Thomas H. Williams, Ralph A. Smith, .....	Kingston, ..... Plymouth, .....	L. V., D. L. and W., and D. and H. D. L. and W. and D. and H.
Luzerne, .....	Luzerne, .....	C. C. Rose, .....	Scranton, .....	E. R. Pettibone, .....	Dorrancton, .....	D. and H.
Lehigh and Wilkes-Barre Coal Co. Nottingham No. 15, ..... Lance No. 11, ..... Delaware, Lackawanna and Western Railroad Co. Woodward, ..... Avondale, ..... Loomis, .....	Luzerne, .....	C. F. Huber, .....	Wilkes-Barre, .....	E. J. Newbaker, .....	Wilkes-Barre, .....	C. R. R. of N. J.
Parrish Coal Co. Buttonwood, ..... Parrish, ..... Buttonwood Washery, ..... Parrish Washery, .....	Luzerne, .....	R. A. Phillips, .....	Scranton, .....	H. G. Davis, .....	Kingston, .....	D. L. and W.
Plymouth Coal Co. Dodson, ..... George F. Lee Coal Co. Chauncy, ..... West Nanticoke Coal Co. West Nanticoke, ..... West Nanticoke Washery, .....	Luzerne, .....	H. H. Ashley, .....	Wilkes-Barre, .....	Thomas R. Evans, .....	Plymouth, .....	C. R. R. of N. J.
Hillside, .....	Luzerne, .....	David Spruks, .....	Scranton, .....	Gilbert S. Jones, .... Benjamin Ames, ..... F. W. Davies, .....	Dorrancton, ..... Plymouth, ..... Wilkes-Barre, .....	D. L. and W. D. L. and W. Pennsylvania
	Luzerne, .....			Jonathan Vipond, ....	Scranton, .....	D. and H.

§New mine; just opening from surface.

TABLE 2.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured, quantity of powder, dynamite and permissible explosives used, etc.

Names of Operators and Collieries	County	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives			Number of horses and mules
										Number of pounds of powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used	
Kingston Coal Co.													
Kingston No. 2	{ Luzerne, ... }	747,661	21,225	72,712	841,601	237	1,649	7	.....	.....	6,050	169	
Gaylord		201,704	22,000	10,437	234,131	258	501	3	.....	.....	.....	55	
Gaylord Washery	Luzerne, .....	949,368	43,225	83,139	1,075,732	.....	2,150	10	.....	.....	6,050	224	
Totals		64,185	.....	17,098	81,284	256	29	.....	.....	.....	.....	.....	
		1,013,54	43,225	100,337	1,157,016	.....	2,179	10	.....	.....	6,050	224	
Delaware and Hudson Co.													
Plymouth No. 3	{ Luzerne, ... }	385,585	8,847	5,129	399,561	218	831	.....	1	.....	.....	84	
Plymouth No. 5		349,868	3,840	6,718	360,426	194	962	.....	.....	.....	.....	.....	
Plymouth No. 2	{ Luzerne, ... }	179,543	30,642	.....	210,185	137	618	7	9	.....	6,706	60	
Totals		914,996	43,329	11,847	970,172	.....	2,411	8	16	.....	12,029	213	
Washeries													
Plymouth No. 3	{ Luzerne, ... }	58,339	30,011	.....	88,350	174	.....	.....	.....	.....	.....	.....	
Plymouth No. 5		15,639	28,342	.....	43,972	44	.....	.....	.....	.....	.....	.....	
Plymouth No. 2	{ Luzerne, ... }	4,234	14,962	.....	19,196	19	.....	.....	.....	.....	.....	.....	
Totals		78,203	73,315	.....	151,518	.....	.....	.....	.....	.....	.....	.....	
		993,199	116,644	11,847	1,121,690	.....	2,411	8	16	.....	12,629	213	

†Included with Plymouth No. 3 Colliery.

‡Included with Plymouth No. 5 Colliery.

§Included with Plymouth No. 2 Colliery.

Lehigh and Wilkes-Barre Coal Co. Nottingham No. 16, .....	590,657	61,297	8,218	660,172	211	1,120	5	5	313,100	7,378	425	166
Lance No. 11, .....	357,167	36,191	3,244	396,602	223	706	1	2	243,000	7,719	36,925	108
Totals, .....	947,824	97,488	11,462	1,036,774	.....	1,826	6	7	556,100	15,297	37,350	274
Delaware, Lackawanna and Western Railroad Co.												
Woodward, .....	853,355	41,660	8,860	903,865	250	1,701	7	1	760,600	7,350	30,160	132
Avondale, .....	80,049	18,622	1,985	100,706	182	440	1	.....	36,825	2,540	5,173	46
Loomis, § .....	26,064	.....	.....	26,064	508	92	.....	.....	19,175	732	6,543	9
Totals, .....	959,518	60,282	10,835	1,030,635	.....	2,233	8	1	816,600	10,622	41,883	187
Parrish Coal Co.												
Buttonwood, .....	147,697	20,000	3,630	181,387	207	561	1	4	75,000	96,700	200	101
Parrish, .....	141,376	30,000	5,366	176,942	233	503	8	3	83,000	40,675	16,000	78
Washeries												
Buttonwood, .....	289,273	60,000	9,056	358,329	.....	1,037	9	7	160,000	137,375	16,250	179
Parrish, .....	78,479	.....	3,423	81,902	4	28	.....	.....	.....	.....	.....	.....
.....	23,173	.....	2,635	25,808	1	11	.....	.....	.....	.....	.....	.....
Totals, .....	101,652	.....	6,058	107,710	.....	39	.....	.....	.....	.....	.....	.....
Plymouth Coal Co.	390,925	60,000	15,114	466,039	.....	1,106	9	7	160,000	137,375	16,250	179
Dodson, .....	97,700	30,000	3,308	131,008	156	385	1	2	36,425	9,000	.....	34
George F. Lee Coal Co.	88,336	7,500	4,521	100,357	227	317	.....	.....	.....	.....	7,200	43
West Nanticoke Coal Co.	35,801	2,100	664	38,565	201	43	.....	.....	.....	.....	.....	.....
West Nanticoke Washery, .....												
Bright Coal Co.	16,518	1,700	457	18,675	239	51	.....	.....	13,400	800	.....	11
Hillside, .....	4,543,375	418,939	158,445	5,120,759	.....	10,551	42	33	2,895,075	297,773	108,732	1,165
Grand totals, .....												

†Included with Buttonwood Colliery.  
§Included with Parrish Colliery.  
§Coal prepared at Bliss.



TABLE 2.—Part 2

Names of Operators	County	Number of Boilers				Locomotives			Total horse power	Number of steam engines of all classes	Total horse power	Number of pumps delivering water to surface	Capacity in gallons per minute	Quantity delivered to surface per minute—gallons	Number of electric dynamos	Number of air compressors
		Cylindrical	Horse power	Tubular	Horse power	Steam	Air	Electric								
Kingston Coal Co.	Luzerne,	.....	.....	12	2,950	7	.....	6	2,950	42	4,150	3	2,940	2,900	4	1
Delaware and Hudson Co.		54	1,458	27	7,000	.....	.....	.....	8,438	119	9,657	10	14,700	4,150	.....	7
Delaware and Wilkes-Barre Coal Co.		.....	.....	24	5,550	3	5	.....	5,550	117	8,055	5	5,648	2,868	.....	.....
Delaware, Lackawanna and Western Railroad Co.		.....	.....	24	4,830	3	.....	17	4,830	71	8,205	11	14,480	10,323	6	3
Parrish Coal Co.		.....	.....	30	4,500	.....	.....	.....	4,500	50	8,281	6	4,950	2,800	.....	2
Plymouth Coal Co.		.....	.....	13	2,650	.....	.....	.....	2,650	18	2,650	5	3,500	2,500	1	4
George F. Lee Coal Co.		2	300	3	300	.....	.....	.....	300	6	800	.....	.....	.....	.....	.....
West Nanticoke Coal Co.		.....	.....	3	300	1	.....	.....	300	3	350	1	.....	800	3	51
Bright Coal Co.		.....	235	3	235	.....	.....	.....	235	6	302	1	125	52	.....	.....
Totals.		56	1,658	139	28,415	14	5	23	30,073	432	42,300	42	47,143	26,433	14	72

TABLE 3.—Number of each class of employees inside and outside of mines

Names of Operators	County	Inside										Outside										Grand total inside and outside	
		Mine foremen	Assistant mine foremen	Fire bosses and assistants	Miners	Miners' laborers	Drivers and runners	Doorboys and helpers	Pumpmen	Company men	All other employees	Total inside	Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Slatepickers (boys)	Slatepickers (men)	Bookkeepers and clerks	All other employees	Total outside		
Kingston Coal Co., .....	Luzerne, ...	5	12	5	621	557	225	27	3	98	130	1,683	1	3	17	41	4	52	6	311	496	2,179	
Delaware and Hudson Co., .....		4	5	15	555	582	232	55	15	283	44	1,790	...	5	23	112	71	105	6	299	621	2,411	
Lehigh and Wilkes-Barre Coal Co., .....		3	3	16	520	386	161	66	13	258	53	1,479	...	2	17	69	75	13	8	163	347	1,826	
Delaware, Lackawanna and Western Railroad Co., .....		5	4	20	596	599	158	56	28	272	134	1,872	...	4	34	62	49	...	5	207	361	2,233	
Parrish Coal Co., .....		3	3	11	255	170	95	50	13	38	164	801	...	1	13	66	71	11	8	132	305	1,106	
Plymouth Coal Co., .....		1	1	3	53	73	33	9	8	40	27	250	1	1	14	25	25	5	2	62	135	385	
George F. Lee Coal Co., .....		1	1	1	79	102	20	...	...	31	17	252	...	1	4	4	29	...	2	25	65	317	
West Nanticoke Coal Co., .....		...	...	...	...	...	...	...	...	...	...	...	...	1	1	3	3	4	1	30	43	51	
Bright Coal Co., .....		...	...	...	12	10	2	1	2	2	...	29	...	...	...	1	4	7	...	8	27	51	
Totals, .....			21	29	71	2,631	2,481	926	261	82	1,022	569	8,156	5	19	184	386	334	190	40	1,237	2,395	10,551



TABLE 4.—Fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 9	Henry Miles, .....	Welsh, .....	Timberman, .....	40	M.	1	6	Parrish, .....	Luzerne, ...	{ Killed by an explosion of dynamite while on their way to work on the gangway.
	John Humphreys, .....	Welsh, .....	Company man, .....	37	M.	1	4			
	Elmer Jones, .....	Welsh, .....	Company man, .....	32	S.	...	...			
10	Paul Reshofski, .....	Polish, .....	Miner, .....	41	M.	1	7	Plymouth No. 5, ..	Luzerne, ...	{ Fatally injured by premature blast at face of chamber.
	Anthony Goholes, .....	Lithuanian, .....	Laborer, .....	28	S.	...	...			
	August Garblin, .....	Lithuanian, .....	Timberman, .....	44	M.	1	4			
17	John Yudichak, .....	Slavonian, .....	Miner, .....	42	M.	1	...	Woodward, .....	Luzerne, ...	{ Fatally injured by explosion of gas in old workings.
	Albert Silifski, .....	Polish, .....	Miner, .....	34	S.	...	...			
	Julius Comminski, .....	Polish, .....	Laborer, .....	21	S.	...	...			
Feb. 3	Louis Mazgay, .....	American, .....	Runner, .....	24	S.	1	...	Plymouth No. 2, ..	Luzerne, ...	{ Fatally injured by being squeezed between cars. Outside.
	Walter Hartman, .....	American, .....	Leading boss, .....	30	M.	1	...			
	John Nush, .....	Polish, .....	Runner, .....	40	M.	1	5			
March 5	Anthony Foltz, .....	Polish, .....	Laborer, .....	38	M.	1	4	Woodward, .....	Luzerne, ...	{ Killed by fall of coal at face of chamber.
	Joseph Welsh, .....	Lithuanian, .....	Laborer, .....	25	S.	...	...			
	Felix Subluskie, .....	Polish, .....	Miner, .....	34	M.	...	...			
8	Roman Sarona, .....	Polish, .....	Miner, .....	34	M.	1	4	Nottingham No. 15, ..	Luzerne, ...	{ Fatally injured by explosion of gas at face of chamber.
9	Charles Glass, .....	Polish, .....	Miner, .....	70	M.	1	...			
20	Joseph Dealbo, .....	Italian, .....	Laborer, ..	26	S.	...	...			
20	Charles Chaperski, ..	Lithuanian, ..	Miner, .....	47	M.	1	...	Kingston No. 2, ..	Luzerne, ...	{ Fatally injured by being struck by a lever while helping to put a derailed car on the track on gangway.
21	Thomas Davis, .....	Welsh, .....	Miner, .....	37	S.	...	...			
May 29	Isaac Cox, .....	English, .....	Miner, .....	62	M.	1	...			
June 28	Joseph Amendelery, ..	Italian, .....	Miner, .....	27	S.	...	...	Kingston No. 2, ..	Luzerne, ...	{ Fatally injured by explosion of blast at face of chamber.

TABLE 4—Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of orphans		Name of Colliery	County	Nature and Cause of Accident in Brief
						Number of widows	Number of orphans			
July 16	Frederick Morinski, ... William Pulcisky, ...	Polish, .... Polish, ....	Miner, .... Company man,	29 19	M. S.	1 ...	1 ...	Gaylord, ..... Kingston No. 2, ..		Killed by fall of coal at face of chamber. Killed by car on gangway.
17	Andro Mesbo, .....	Polish, ....	Footman, ..	35	M.	1	7	Avondale, .....		Killed by runaway cars on slope.
23	Jacob Dupenavage, ...	Lithuanian, ..	Doorman, ..	51	S.	...	...	Lance No. 11, ...		Killed by cars on gangway.
24	{ Michael Morrissey, ... John McGuire, ...	American, .. Irish, .....	Tracklayer, Company man,	54 59	M. M.	1 1	...	{ Plymouth No. 2, ..		{ Killed by explosion of gas in old work- ing.
Aug. 10	Benjamin Grenevitze, kie,	Polish, ....	Laborer, ..	25	S.	...	...	Dodson, .....		Killed by cars on slope.
Sept. 4	Joseph Paczkawcken,	Polish, ....	Miner, ....	30	M.	1	4	Nottingham No. 15,		Fatally burned by explosion of gas at face of chamber.
10	Olef Lawson, .....	Swedish, ....	Company man,	63	M.	1	3	Kingston No. 2, ..	Luzerne, ...	Fatally injured by cars on gangway.
Nov. 2	John Jones, .....	English, ....	Laborer, ..	35	M.	1	3	Plymouth No. 2, ..		Killed by fall of roof at face of chamber.
13	Michael Piskarik, ...	Austrian, ...	Laborer, ..	41	S.	...	...	Plymouth No. 2, ..		Killed by cars under breaker. Outside.
16	Peter Sacria, .....	Polish, ....	Miner, ....	40	M.	1	...	Nottingham No. 15,		Killed by fall of coal on gangway.
18	George Rander, .....	Slavonian, ...	Miner, ....	28	M.	1	2	Kingston No. 2, ..		Killed by fall of roof at face of chamber.
	Michael Washeleson, .	Russian, ....	Company man,	50	M.	1	...	Nottingham No. 15,		Killed by being struck by iron rail in cham- ber.
20	Pilati Fredrica, .....	Italian, ....	Miner, ....	29	M.	1	...	Kingston No. 2, ..		Killed by fall of roof in face of chamber.
30	Alexander Sowsko, ...	Polish, ....	Laborer, ..	19	S.	...	...	Woodward, .....		Killed by cars on gangway.
	John Edwards, .....	Welsh, ....	Driver, ....	18	S.	...	...	Woodward, .....		Killed by cars on gangway. He fell asleep on rail.
Dec. 11	Michael Karashorn, ...	Polish, ....	Laborer, ...	29	M.	1	4	Bottonwood, .....		Killed by falling down shaft.
	Stanley Pridelous, ...	Lithuanian, ..	Miner, ....	43	M.	1	6	Plymouth No. 2, ..		Killed by fall of roof at face of chamber.
18	Andrew Yatzinjack, .	Russian, ....	Miner, ....	28	M.	1	3	Kingston No. 2, ..		Killed by fall of roof at face.



TABLE 5.—Non-fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 29	Peter Bartklofski, ...	Lithuanian.	Miner, ...	36	M.	Nottingham No. 15, ...		Leg and hip fractured by fall of coal at face of chamber.
Feb. 12	Walter Oshefski, ...	Polish, ...	Doorboy, ...	16	S.	Lance No. 11, ...		Jaw bone broken by cars on slope.
15	Harry Flynn, ...	American, ...	Footman, ...	23	M.	Plymouth No. 5, ...		Leg fractured by being struck by rope on slope.
March 8	Lester Flick, ...	American, ..	Slatepicker, ...	16	S.	Plymouth No. 5, ...		Arm fractured by falling out of breaker window to the ground. Outside.
9	Michael Malinches, ...	Lithuanian.	Miner, ...	50	M.	Buttonwood, ...		Leg fractured by explosion of blast at face of chamber.
16	Andrew Horiety, ...	Slavonian, ..	Laborer, ...	28	M.	Plymouth No. 2, ...		Injured by rush of culm while cleaning out bore hole.
19	Sammuel Keast, ...	English, ...	Miner, ...	46	M.	Plymouth No. 2, ...		Thigh fractured by cars in chamber.
26	Frank Trela, ...	Polish, ...	Miner, ...	40	M.	Buttonwood, ...		Hand fractured by premature blast at face of chamber.
28	Albiah Timms, ...	American, ...	Doorman, ...	65	M.	Plymouth No. 5, ...		Leg fractured by cars on gangway.
29	Joseph Eustice, ...	American, ..	Miner, ...	30	M.	Plymouth No. 2, ...		Burned by explosion of powder in face of chamber.
April 26	John Mugford, ...	American, ..	Laborer, ...	23	S.	Plymouth No. 5, ...	Luzerne, ...	Arm fractured by falling from platform on gangway.
June 3	George Chess, ...	Polish, ...	Miner, ...	35	M.	Buttonwood, ...		Hip and pelvis fractured by fall of rock at face of chamber.
10	John Bugay, ...	Slavonian, ...	Miner, ...	37	M.	Plymouth No. 2, ...		Burned by explosion of powder in chamber.
12	Joseph Sheridan, ...	American, ...	Runner, ...	21	S.	Plymouth No. 5, ...		Arm fractured by cars on gangway.
23	John Pells, ...	Polish, ...	Runner, ...	20	S.	Parrish, ...		Burned by explosion of gas on gangway.
July 24	Jocannar Kowalski, ...	Polish, ...	Doorboy, ...	17	S.			
	Fredrick Grosse, ...	German, ...	Miner, ...	38	M.			
	Stanley Malefski, ...	Polish, ...	Laborer, ...	56	M.	Plymouth No. 2, ...		Hands and face burned by explosion of gas in old workings. Crouse and Malefski were on the gangway and Davis on the slope when the explosion occurred.
	James Davis, ...	Welsh, ...	Footman, ...	23	M.			Leg fractured by fall of roof at face of chamber.
30	Joseph Kowalewski, ..	Polish, ...	Miner, ...	47	M.	Plymouth No. 5, ...		Arm fractured by machinery. Outside.
Aug. 5	Thomas Miller, ...	American, ...	Slatepicker, ...	15	S.	Plymouth No. 3, ...		Seriously injured while trying to jump on moving cars. Outside.
23	George Hoffman, ...	German, ...	Barn boss, ...	44	M.	Buttonwood, ...		Seriously injured by machinery. Outside.
24	Chester Westerfield, ..	American, ..	Slatepicker, ...	16	S.	Dodson, ...		

TABLE 5—Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Aug. 26	Joseph Wilkes, .....	Russian, ....	Driver, .....	24	S.	Parrish, .....	Luzerne, ...	Thumb amputated by cars at face of chamber.
Sept. 14	Stanley Jones, .....	American, ..	Laborer, .....	22	S.	Plymouth No. 2, .....		Internally injured by slipping while pushing mine car. Outside.
30	Samuel March, .....	Russian, ....	Laborer, .....	30	M.	Nottingham No. 15, ..		Foot crushed by being run over by mine locomotive. Outside.
Oct. 5	Joseph Macavage, ...	Lithuanian, ..	Miner, .....	30	M.	Nottingham No. 15, ..		Shoulder fractured by fall of slate at face of chamber.
8	Archie Price, .....	Welsh, .....	Driver, .....	18	S.	Woodward, .....		Ribs fractured by cars on gangway.
17	Alex. Zauricht, .....	Polish, .....	Miner, .....	28	S.	Plymouth No. 2, .....		Leg fractured by fall of coal at face of chamber.
Nov. 23	John Demski, .....	Polish, .....	Driver, .....	18	S.	Nottingham No. 15, ..	Luzerne, ...	Ribs fractured by being kicked by a mule.
Dec. 9	Warren Gundeman, ...	American, ..	Miner, .....	45	M.	Dodson, .....		Injured by fall of roof on slope.
10	James Lewis, .....	Welsh, .....	Assistant fire boss, ..	47	M.	Lance No. 11, .....		Nose fractured by falling. Outside.
	Anthony Barnofski, ..	Polish, .....	Driver, .....	29	M.	Nottingham No. 15, ...		Foot crushed by cars on gangway.



*No. 9. Slope, Parrish Colliery.*

### Uninjured in the Vicinity

- (8) Door-boy
- (9) Frank Strake, Laborer and Driver.
- (10) Frank Sawatskie
- (11) Jacob Wet
- (12) Joseph Vitzovitsky
- (13) Where tools were found  
stocked on the side.



## EXPLOSION OF GAS AND DYNAMITE AT PARRISH COLLIERY

On January 9, 1912, at about 4.45 p. m. an explosion of gas and dynamite occurred in No. 1 West gangway, No. 9 slope, Five Foot vein, resulting in the death of Henry Miles and August Garblin timbermen, Elmer Jones and John Humphreys, company men, Paul Reshowski, miner and Anthony Goholes, laborer.

The first intimation of any trouble occurred at 8 o'clock that morning. The driver took his mule in the gangway for the purpose of bringing out a loaded car. When the door tender attempted to open his door to allow the driver to pass out he found he was unable to open it. They called the gangway miner out to make an examination of the roof and he declared it unsafe, as the roof had commenced to work as shown by the effect upon the door.

It appears that it was the custom in this section of the mine to blast down the top rock instead of taking up bottom rock, as is the custom in some places for the height of car. The top rock in this gangway in many places proved, upon examination, to be very treacherous. At the point where the door was located the vein had increased in thickness giving sufficient height for the car and did not require any blasting down of top rock. This so-called bridge of rock, which was about 30 feet long and 18 inches in thickness, the entire width of the gangway, was pronounced to be solid and in good condition. However, when the doortender was unable to open his door and after the examination by the miner, the fire boss, Thomas Richards, who was in close proximity thereto, was sent for. He arrived shortly afterward, and also made an examination of the roof, and instructed the miner to assist him in setting a few props to relieve the condition until such time as the timbermen could be notified and this portion of the gangway placed in a safe condition. Mr. Richards also instructed the miners inside of the door to quit work for the remainder of the day, which order was readily complied with. The fire boss explained the conditions to Evan Thomas, the mine foreman, at noon. The mine foreman afterwards instructed his assistant, David Davis, to go where the trouble was and make a personal examination and report to him the result of his inspection. The assistant foreman arrived at 3 p. m. and called the foreman over the telephone, from 1 West Five Foot, to send in the timberman that was employed at night. The miners employed in the chambers outside the bad roof remained at work during the entire day or until about 4 o'clock. John Ayers, the runner in this section of the mine, came out of the gangway at 4 o'clock. The night shift driver and doorboy went into the gangway at 4.15 to see if the gangway miner wanted a car to load rock, and not finding any one present in the face they came out of the gangway and immediately went up to No. 2 Counter. The boys claim that when walking in and out the gangway they carried naked lamps on their caps. About 4.45 the timbermen arrived to take down the bad roof on the gangway, and with them were Paul Reshowski and Anthony Goholes, who had been instructed by the foreman to work with the timbermen on this shift. These men had just arrived at the junction of the gangway and No. 1 Counter road and a short distance inside the main doors, when a terrific explosion occurred that instantly killed six men and slightly injured two others, Ed-



ward Beynon and Anthony Likowitch. Beynon was following the timbermen to ask them for some oil and was a short distance behind them. Likowitch in some mysterious manner was saved. James Wolfe, who was employed as fire boss in No. 10 tunnel, Hillman vein, and who was approximately 1,500 feet from where the victims were discovered, felt the concussion and heard the slamming of the doors. Knowing that something unusual had occurred in the Five Foot vein, he hastened in that direction and cautiously using his safety lamp he tested repeatedly for gas until he finally reached the men, on seeing their condition he returned to the Hillman vein to get help from some foreigners, who were there employed, but they refused to assist. In the meantime word had been sent through the 'phone to the foreman's office, and in a short time plenty of help was on hand.

The concussion extinguished the naked lights of those employed on No. 2 Counter, but their safety lamps remained lighted. They were working on the same split and the return end of the district. They did not seem to be in any great hurry to leave their places after the explosion, but finally grouped themselves together, ten minutes after the accident had occurred, and came down No. 1 Counter upon the victims, and continued out the gangway to where the air was good. These men claim that the smoke through which they walked was pungent and white in color and very dense, although they were able to keep their safety lamps lighted. It was proved by those who had last visited the gangway that no fall had occurred to hamper the ventilation and that the place was in normal condition with the exception of the one piece of bad roof, which had been temporarily propped.

The problem that confronted the officials of the mine was, what created the explosion so soon after the day shift men had departed for their homes as the miners themselves claim they left their places in good condition, perfectly free from gas. I made an effort toward an investigation the next morning but was not able to advance more than 50 feet beyond where the men were found, owing to a large accumulation of gas. The explosion had deranged the ventilation to such an extent that practically the entire quantity of air was short circuiting, leaving the district without any circulation and allowing the entire section to fill up with explosive gas.

Men working with locked safety lamps were employed to build walls and doors and to restore the ventilating current to its normal condition.

In a few days we were able to reach the face of this gangway also the faces of the chambers, and proceeded to investigate the cause of the accident. We found that great havoc had been wrought, especially in chambers Nos. 47, 48 and 49. The props had all been dislodged from their position and blown toward the gangway, allowing the roof to fall almost the entire length of the chambers. Several local falls had occurred on the gangway and not a vestige of a check door or brattice had been left. The destruction was plainly visible and it appears that the force of the explosion came from the chambers, as timber and other debris, including the empty car that stood upon a chamber road, had all been picked up and dashed against the lower pillar of the gangway, the greatest force being out towards the men, judging from the position of the timber lying upon

the floor of the gangway. A small portion much farther in seemed to have leaned towards the gangway face. The timber in the face of the gangway and close thereto, was undisturbed. The victims had arrived just within the explosive zone. The main doors immediately in the rear remained intact, except a portion of the masonry over and upon the side of the inner door, which was somewhat damaged. It was known that the timbermen had in their possession 16 sticks of dynamite, which was thought to have exploded in some unaccountable manner. Likowitch claimed he had 8 sticks, 4 in each side pocket of his coat, while going in. Upon his return after the explosion while passing through the main doors it suddenly dawned upon him about the dynamite that he carried and placing his hand in his pocket he could only find 4 sticks, which he threw away the remaining 4 sticks could not be found. August Garblin carried 8 sticks in his hand held by a wire. His body was somewhat mutilated, but not to the extent, in my opinion, that he would have been if the dynamite that he carried had exploded, as I fully believe that when the explosion occurred the dynamite that he carried was scattered in all directions and assumed the appearance of the very dust itself, which made it exceedingly difficult to find.

Henry Miles, the chargeman, was in possession of a safety lamp, and later on when the work of cleaning was well under way the lamp was discovered.

After a most thorough investigation, I have arrived at the following conclusion:

That a box containing black powder and giant powder located between chambers Nos. 51 and 52 was the source whence the trouble originated. It was plainly evident that a 25-pound keg of black powder had exploded, due to a spark having been dropped into the box on a piece of burlap, with which the miner at times carried his dynamite. As the box was perfectly dry the fire increased and soon came in contact with the powder, which exploded, also fusing 25 pounds of dynamite. The miner's box, although its parts, except the lid, remained intact, was burned to a crisp. Taking into consideration that the vein in this section is less than 5 feet in thickness, the energy expended on the air resulted in check doors and brattice being blown down, deranging the ventilation and allowing gas to accumulate. This gas coming in contact with a small feeder that had probably been ignited by the flame of the powder, created an explosion. The gas flame in spreading reached other black powder and dynamite simultaneously, which propagated and greatly intensified the explosive force. The reason why no afterdamp remained in the air, for no odor could be detected after the explosion except that of the giant, nor did any of the workmen who were at work on Nos. 1 and 2 Counters feel any ill effects from this gas when the gas was ignited and before combustion was completed, was that the concussion of dynamite being so violent it extinguished the gas flame and by its compression cleared the district of air and gases. There is no evidence that a gas flame had been exposed a sufficient length of time to even scorch the brattice boards or bark upon the props, for wherever there appeared on the gangway pillars a shelf or projection or crevice in the roof, there was found torn and ragged pieces of wood, which showed that the victims were blown and struck with flying missiles that filled the air. It appears that the

miners in this section of the mine used giant and black powder for each blast in cutting their coal, which is considered a most dangerous practice and contrary to the Anthracite Mine Law. Each miner having a 25-pound box of giant as well as 25 pounds of black powder, there was established a veritable magazine in this section of the mine, which could under various conditions, while they were engaged at their work, have created an explosion that would have resulted in the death of every person in this gangway. When the section was cleared of its falls and ventilation was properly restored, and they were ready to resume operations, dynamite was prohibited to be used for blasting coal and permissible powder recommended, which some of the men reluctantly accepted, seemingly indifferent to the great danger of having a large quantity stored and the reckless manner in which it was used by them.

The following verdict was rendered by the jury:

"We find that Elmer Jones, Paul Reshofski, August Garblin, Henry Miles, John Humphreys, and Anthony Goholes, met their deaths from injuries in the No. 1 West Gangway of the Five Foot vein, of the Parrish Coal Company, at Plymouth, on the afternoon of January 9, 1912, by an explosion of gas in the said gangway, and that the said gas was ignited by a naked light of August Garblin, one of the men killed. We further find that the said Parrish Coal Company and its officials were negligent in sending men into said gangway, knowing that the roof was working and likely to generate gas, without first sending the fire boss to ascertain whether or not the said roof was in good condition.

(Signed)

C. W. ZERBY,  
ANDREW T. RYSCAVAGE,  
SIMON CARPENTER,  
HUGH TORMAY,  
WILLIAM BUTLER,  
CHARLES TREBILCOX."

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## CONDITION OF COLLIERIES

### KINGSTON COAL COMPANY

Kingston No. 2 and Gaylord Collieries.—Safety conditions, ventilation and drainage, good.

### DELAWARE AND HUDSON COMPANY

Plymouth Nos. 2, 3 and 5 Collieries.—Safety conditions, ventilation and drainage, good.

### LEHIGH AND WILKES-BARRE COAL COMPANY

Nottingham No. 15 and Lance No. 11 Collieries.—Safety conditions, ventilation and drainage, good.

### DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Woodward, Avondale and Loomis Collieries.—Safety conditions, ventilation and drainage, good.



## PARRISH COAL COMPANY

Buttonwood and Parrish Collieries.—Safety conditions, ventilation and drainage, good.

## PLYMOUTH COAL COMPANY

Dodson Colliery.—Safety conditions, ventilation and drainage, good.

## GEORGE F. LEE COAL COMPANY

Chauncey Colliery.—Safety conditions and drainage good. Ventilation fair.

## WEST NANTICOKE COAL COMPANY

West Nanticoke Colliery.—New opening, just opening up from surface.

## BRIGHT COAL COMPANY

Hillside Colliery.—Safety conditions and ventilation good. Drainage fair.

## IMPROVEMENTS

## KINGSTON COAL COMPANY

Kingston No. 2 Colliery.—Inside: A tunnel was driven from Cooper vein to Lance vein for haulage and second opening. Two 2-inch drainage holes were bored from Cooper vein to Bennett vein. Two electric hoists were installed in Bennett vein. A new 6-inch hole was completed from the surface to Red Ash vein, a distance of 550 feet, through which electric wires are conducted, the old ones having been removed from the shaft.

At No. 3 shaft a 15-degree rock plane was completed from Ross vein through the Eleven Foot vein to Bennett vein, making a second opening between Nos. 1 and 3 shafts.

In the slope and tunnel a new manway and muleway completed from Eleven Foot vein to the surface, and a new second opening completed from Eleven Foot vein to Bennett vein on the west side.

Outside: Rebuilt empty car trestle at head of No. 3 shaft extended No. 2 shaft boiler room to install 600 horse power additional B. and W. boilers. New blast fan has been purchased. New 10-inch steam line constructed from boiler house to No. 3 shaft and fan engines.

Gaylord Colliery.—An 18 by 30 by 27½ by 24 inch Ingersoll-Rand Corliss, valve two-stage air compressor was installed.

## DELAWARE AND HUDSON COMPANY

Plymouth No. 5 Colliery.—At Boston Red Ash, No. 17 plane air return from No. 13 plane 7 by 12 by 132 feet, 18 degree pitch, and work on concrete stables completed.

Plymouth No. 2 Colliery.—Two 24-inch bore holes drilled from surface to Bennett vein, 640 feet deep. Concrete reinforcements to pumping rooms Nos. 1 and 2 in Bennett vein. Tunnel, 7 by 12 feet, 422 feet long, driven from No. 7 plane in "G" vein to top of Plymouth No. 5 Shaft. Established Mine Rescue Station for Plymouth Division, equipped with Draeger Apparatus and other appliances.

## LEHIGH AND WILKES-BARRE COAL COMPANY

Nottingham No. 15 Colliery.—Inside: Built fireproof mule barn. Remodeling pumping plants, No. 1 slope. Completed rock manway from surface to Ross vein at Reynolds.

Outside: Completed mule barn at Reynolds, steam line to River pump and bore hole.

Lance No. 11 Colliery.—Inside: Completed fireproof mule barn. Installing concrete and steel timbering in No. 4 tunnel and shaft landing and also in small engine and pump rooms. 12-inch bore hole for steam line to shaft level pump; Tunnel for air return, Stanton to No. 2 air shaft.

Inman No. 21 Colliery.—Finished development in Baltimore vein.

## DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Woodward Colliery.—Completed the installation of, and put in operation the 20-foot ventilating fan on No. 2 shaft to take the place of two 16-foot ventilating fans. The new fan is giving much better results than the old ones gave. The work of sinking a slope on the Five Foot seam is under way, and a rock tunnel has been driven for a second opening from No. 3 East lift, No. 1 slope, Lance vein to Cooper vein.

Avondale Colliery.—The work of reopening this colliery after the squeeze of 1910 in the Red Ash vein is about completed. The Ross vein, however, is still under water. Completed the work of installing large capacity centrifugal pumps, electrically operated, in Red Ash vein. Preparations are now being made for the installation of larger capacity pumps in the Ross vein, by which this seam will soon be unwatered.

Loomis Colliery.—The work of development is going on as fast as circumstances permit. Gangways are being driven east and west of Nos. 1 and 2 shafts in the Mills and Hillman veins. The work of installing and electrically operated plunger pump at the foot of No. 2 shaft is under way. The buildings for the housing of the shaft hoisting engines, mule barns, store room, boiler house, etc., are under way and will be of fireproof construction.

Along the old river road they are erecting large and commodious houses as residences for the foreman and their assistants.

This Company made special effort during the year to reduce the number of accidents in and about the mines. Notices have been posted at the mines calling attention to the fact that "safety is the first consideration," and the pay envelopes have also been printed with the inscription "Safety First Consideration."

## PARRISH COAL COMPANY

Buttonwood Colliery.—Inside: Completed 3 concrete engine houses. Built new pump room at foot of shaft, also repaired and concreted the other two pump rooms. Built concrete barn in Abbott vein and one in Stanton vein. Drove 2 rock tunnels through a fault in Stanton vein, each 100 feet long, for production. Extensive work on No. 11 slope in Stanton vein to shorten haulage and place engine. Silting in Abbott vein to strengthen pillars near shaft.

Outside: Washery was completed.



Parrish Colliery.—Inside: Completed 3 concrete and steel air bridges; 4 concrete engine houses; 3 concrete pump rooms, and 4 concrete barns in Baltimore vein. Made new intake for manway in Five Foot; 3 rock planes 160 feet, and a rock shaft 55 feet to improve ventilation. Drove a tunnel 400 feet long from Baltimore vein to Top Baltimore, and made an opening to Five Foot vein, for safety; also a tunnel 300 feet long from Baltimore vein to Five Foot, for production. Made two 10-inch bore holes from Parrish Baltimore vein to Hillman vein Buttonwood colliery, for new pumping plant, a total of 495 feet. Reopening through a "squeezed" area in Top Baltimore vein a distance of 1,200 feet. Made a new airway along a fault in Hillman vein a distance of 650 feet, to remove doors from haulage road. Silting operations have been carried on extensively during the year.

Outside. Washery was enlarged.

#### PLYMOUTH COAL COMPANY

Dodson Colliery.—Inside: Built a stable in Red Ash vein to accommodate 24 mules; engine house at West slope Red Ash vein; engine house East slope, Red Ash vein; pump house foot of rock slope, Red Ash vein; engine house at head of rock slope, Bennett vein; all of concrete and steel, also built a hospital of concrete in Bennett vein, and an office room of concrete and steel at foot of shaft. Placed 48 sets of steel timber at head of rock slope, Bennett vein, 18 inch "I" beam collars 8 inch H section legs. Installed in Bennett vein at foot of shaft one 28 by 10 by 36 inch Duplex Jeanesville steam pump; in Red Ash vein at foot of rock slope one 24 by 10 by 18 inch Duplex Scranton pump, and also one 11 by 18 inch Duplex Jeanesville electric pump driven by 150 horse power General Electric motor.

Outside.—Installed one 21 by 36 by 33½ by 20½ by 30 inch Ingersoll-Rand air compressor, cross compound, non-condensing Corliss engine, running 120 revolutions per minute and producing 3,300 feet of free air per minute. Installed one 16 by 26 by 30 inch cross compound non-condensing Corliss breaker engine to operate breaker, speed, 85 revolutions per minute.



## TENTH DISTRICT

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### LUZERNE COUNTY

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Nanticoke, Pa., February 20, 1913.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor to transmit herewith my Annual Report as Inspector of Mines for the Tenth Anthracite District, for the year ending December 31, 1912, as required by law.

Respectfully submitted,

JOSEPH J. WALSH, Inspector.

## SUMMARY OF STATISTICS

Number of collieries, .....	10
Number of mines, .....	50
Number of mines in operation, .....	50
Number of tons of coal shipped to market, .....	3,904,049
Number of tons used at mines for steam and heat, .....	364,722
Number of tons sold to local trade and used by employes, .....	56,802
Number of tons produced, .....	4,325,573
Number of tons produced by compressed air machines, ..	.....
Number of tons produced by electrical machines, .....	.....
Number of persons employed inside of mines, .....	7,384
Number of persons employed outside, .....	2,344
Number of fatal accidents inside of mines, .....	27
Number of fatal accidents outside, .....	8
Number of non-fatal accidents inside of mines, .....	26
Number of non-fatal accidents outside, .....	6
Number of tons of coal produced per fatal accident inside, .....	160,206
Number of tons produced per fatal accident outside, ....	540,697
Number of tons produced per fatal accident inside and out- side, .....	123,588
Number of persons employed per fatal accident inside, ..	273
Number of persons employed per fatal accident outside, ..	293
Number of persons employed per fatal accident inside and outside, .....	278
Number of persons employed per non-fatal accident inside, ..	284
Number of persons employed per non-fatal accident out- side, .....	391
Number of persons employed per non-fatal accident inside and outside, .....	304
Number of wives made widows, .....	18
Number of children made orphans, .....	45
Number of steam locomotives used inside of mines, .....	2
Number of steam locomotives used outside, .....	25
Number of compressed air locomotives used inside, .....	15
Number of compressed air locomotives used outside, ....	.....
Number of electric motors used inside, .....	67
Number of electric motors used outside, .....	4
Number of fans in use, .....	40
Number of furnaces in use, .....	.....
Number of gaseous mines in operation, .....	34
Number of non-gaseous mines in operation, .....	16
Number of new mines opened, .....	13
Number of old mines abandoned, .....	2

## TABLE A

## PRODUCTION OF COAL

Names of Operators	Tons
Susquehanna Coal Company, .....	1,489,696
Delaware, Lackawanna and Western Railroad Company, .....	1,442,195
West End Coal Company, .....	533,561
Lehigh and Wilkes-Barre Coal Company, .....	510,835
Alden Coal Company, .....	266,747
E. S. Stackhouse Coal Company, .....	82,539
Total, .....	<u>4,325,573</u>

## Production by Counties

Luzerne, .....	<u>4,325,573</u>
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TABLE B—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employees inside	Number of employees outside	Total number of employees	Number of employees inside per fatal accident	Number of employees outside per fatal accident	Number of employees inside per non-fatal accident	Number of employees outside per non-fatal accident
	Total	Outside	Inside	Total	Outside	Inside									
Susquehanna Coal Company, .....	10	4	14	17	4	21	148,970	87,629	2,462	1,103	3,565	246	276	145	276
Delaware, Lackawanna and Western Railroad Co., .....	8	2	10	3	.....	3	180,274	480,732	2,787	520	3,307	348	260	939	.....
West End Coal Co., .....	8	1	9	2	1	3	66,695	266,781	837	304	1,141	385	304	419	304
Lehigh and Wilkes-Barre Coal Co., .....	1	.....	1	2	.....	2	510,835	255,418	636	182	1,818	636	.....	318	.....
Alden Coal Co., .....	.....	1	1	2	.....	2	.....	547	547	172	719	.....	172	274	.....
E. S. Stackhouse Coal Co., .....	.....	.....	.....	.....	1	1	.....	133,374	115	63	178	.....	.....	.....	63
Totals and averages for district, ...	27	8	35	26	6	32	160,206	166,368	7,384	2,344	9,728	273	293	284	391

TABLE C.—Classification of Fatal Accidents Inside and Outside of Mines

	Months												Percentages
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
<b>Causes of Accidents Inside</b>													
Falls of coal, .....	1	1	1	1	1	1	1	1	1	1	1	1	2
Falls of slate, .....	1	1	1	1	1	1	1	1	1	1	1	1	1
Falls of roof, .....	1	1	1	1	1	1	1	1	1	1	1	1	9
Mine cars, .....	1	1	1	1	1	1	1	1	1	1	1	1	4
Explosions of gas, .....	1	1	1	1	1	1	1	1	1	1	1	1	3
Blasts, premature and otherwise, .....	1	1	1	1	1	1	1	1	1	1	1	1	4
Falling down chamber, .....	1	1	1	1	1	1	1	1	1	1	1	1	3
Mules, .....	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>Totals, .....</b>	<b>4</b>	<b>12</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>4</b>	<b>1</b>	<b>27</b>
<b>Causes of Accidents Outside</b>													
Cars, .....	1	1	1	1	1	1	1	1	1	1	1	1	4
Machinery, .....	1	1	1	1	1	1	1	1	1	1	1	1	1
Electricity, .....	1	1	1	1	1	1	1	1	1	1	1	1	1
Struck by timber, .....	1	1	1	1	1	1	1	1	1	1	1	1	1
Kicked by a mule, .....	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>Totals, .....</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>8</b>
<b>Grand totals inside and outside, .....</b>	<b>4</b>	<b>12</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>7</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>6</b>	<b>6</b>	<b>1</b>	<b>35</b>

TABLE D.—Classification of Non-Fatal Accidents Inside and Outside of Mines

	Months												Percentages
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
<b>Causes of Accidents Inside</b>													
Falls of coal, .....	1	1	1	1	1	1	1	1	1	1	1	1	5
Falls of slate, .....	1	1	1	1	1	1	1	1	1	1	1	1	1
Falls of roof, .....	1	1	1	1	1	1	1	1	1	1	1	1	4
Mine cars, .....	1	1	1	1	1	1	1	1	1	1	1	1	10
Blasts, premature and otherwise, .....	1	1	1	1	1	1	1	1	1	1	1	1	1
Mules, .....	1	1	1	1	1	1	1	1	1	1	1	1	3
By falling, .....	1	1	1	1	1	1	1	1	1	1	1	1	1
Struck by timber, .....	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>Totals, .....</b>	<b>3</b>	<b>2</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>26</b>
<b>Causes of Accidents Outside</b>													
Cars, .....	1	1	1	1	1	1	1	1	1	1	1	1	1
Machinery, .....	1	1	1	1	1	1	1	1	1	1	1	1	1
By falling, .....	1	1	1	1	1	1	1	1	1	1	1	1	1
Struck by timber, .....	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>Totals, .....</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>6</b>
<b>Grand totals inside and outside, .....</b>	<b>7</b>	<b>2</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>3</b>	<b>32</b>

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Miners, .....			3			3	1	1	2	2	3	...	15
Miners' laborers, .....	3					1						1	5
Drivers and runners, .....	1					1					1		3
Doorboys and helpers, .....		2								1			3
Bratticemen, .....													1
Chargers, .....										1			1
Totals, .....	4	2	3			5	1	1	2	4	4	1	27
Outside													
Laborers, .....										1	1		2
Headmen, .....						1							1
Leaders, .....							1				1		2
Motor-helpers, .....									1				1
Brakemen, .....										1			1
Chute tenders, .....						1							1
Totals, .....						2	1		1	2	2		8
Grand totals inside and outside, .....	4	2	3			7	2	1	3	6	6	1	35

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Miners, .....	1	2	2	.....	.....	.....	4	.....	1	.....	.....	3	13
Miners' laborers, .....	.....	.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....	2
Drivers and runners, .....	2	.....	1	.....	.....	1	.....	2	1	.....	1	.....	8
Masons, .....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1
Brakemen, .....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	.....	2
Totals, .....	3	2	4	.....	.....	3	4	2	2	1	2	3	26
Outside													
Slatepickers (boys), .....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
Oilers, .....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Motormen, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Laborers, .....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	2
Totals, .....	4	.....	.....	.....	.....	1	.....	.....	.....	.....	1	.....	6
Grand totals inside and outside, .....	7	2	4	.....	.....	4	4	2	2	1	3	3	32

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	Totals
American, .....	.....	.....	.....	.....	.....	2	.....	.....	1	2	3	8
German, .....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1
Polish, .....	.....	.....	.....	.....	.....	4	1	1	1	.....	.....	17
Italian, .....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	1	3
Slovenian, .....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2
Lithuanian, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Austrian, .....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
Russian, .....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	2
Totals, .....	4	2	3	.....	.....	4	2	1	3	6	1	31

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	Totals
American, .....	3	1	.....	.....	.....	.....	.....	.....	1	.....	1	6
Welsh, .....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
German, .....	.....	.....	1	.....	.....	1	.....	.....	.....	.....	.....	2
Polish, .....	3	1	2	.....	.....	1	3	3	1	1	.....	14
Slovenian, .....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2
Lithuanian, .....	.....	.....	1	.....	.....	1	1	.....	.....	.....	.....	4
Totals, .....	7	2	4	.....	.....	4	4	5	5	1	2	32

TABLE I.—Operators and mines, kind of openings, type and size of fans, size of furnaces, volume of air produced by fan or furnace per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	Kind of opening	Gaseous or non-gaseous	Method of ventilation	Diameter of fan in feet and inches	Width of blades in feet and inches	Depth of blades in feet and inches	Number of revolutions per minute	Water gauge developed—in inches	Name of fan	Power used	Number of splits of air currents	Number of cubic feet of air per minute entering the mine at inlet	Total number of cubic feet of air per minute circulating in all the splits	Number of cubic feet of air per minute passing out at outlet	Number of persons employed inside
<b>Susquehanna Coal Co.</b>															
<b>Colliery No. 3:</b>															
Number 2, .....	Shaft, ....	Gaseous, ..	3 Fans, ..	25	8	8	52	3	Gulbal, ....	Steam, .....	7	90,965	\$3,585	101,500	322
				25	8	8	76	3							
				25	8	8	50	2.7							
<b>Number 4, .....</b>															
	Slope, .....	Gaseous, ..	5 Fans, ..	25*	8	8	76	3	Gulbal, ....	Steam, .....	8	168,650	119,000	171,000	229
				20	8.8	12	90	2.8							
				20	12	12	90	2.7							
<b>Number 4, .....</b>															
	Shaft, ....	Gaseous, ..	Fan, .....	15	4	4	60	1.2	Vulcan, ....	Steam, .....	1	123,000	93,000	127,000	213
Number 5, .....	Shaft, ....	Gaseous, ..	Fan, .....	8	5	3	29	1.2	Sturtevant, ..	Steam, .....	1	15,000	16,000	17,000	20
Number 9, .....	Tunnel, ....	Non-gas, ..	Natural, ..	.....	.....	.....	.....	.....	.....	.....	.....	7,500	6,200	8,200	18
Number 1, .....	Drift, ....	Non-gas, ..	Natural, ..	.....	.....	.....	.....	.....	.....	.....	.....	11,000	8,400	11,500	23
Number 1, .....	Slope, .....	Non-gas, ..	Natural, ..	.....	.....	.....	.....	.....	.....	.....	.....	10,800	9,000	11,000	26
<b>Colliery No. 6:</b>															
Number 6, .....	Tunnel, ....	Gaseous, ..	Fan, .....	20	6	6	60	1	Gulbal, ....	Steam, .....	6	94,000	85,000	96,000	179
				25	8	8	60	1	Gulbal, ....	Steam, .....	6	125,000	150,000	125,000	197
<b>Number 6, .....</b>															
	Shaft, ....	Gaseous, ..	3 Fans, ..	20	6	6	50	.9	Gulbal, ....	Steam, .....	1	25,000	16,000	21,000	40
				19	5.5	3	150	1.5	Jeffrey, ....	Electricity, ..	1	76,000	71,000	80,000	295
Number 7, .....	Shaft, ....	Gaseous, ..	Fan, .....	20	6	6	57	.9	Gulbal, ....	Steam, .....	1	21,000	19,000	21,000	40
Number 10, .....	Slope, .....	Gaseous, ..	{ Fan, ... }	7.5	3	3	175	1.5	Gulbal, ....	Electricity, ..	1	25,000	26,000	30,000	60
Number 1, .....	Drift, ....	Gaseous, ..	{ Fan, ... }	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

\*Fan used to ventilate mines at the different collieries.



Colliery No. 7: Number 1—South, .....	Shaft, .....	Gaseous, ..	2 Fans, ..	25 23 23*	8 8 8	72 50 50	2.6 2.8 2.8	Guibal, ....	Steam, .....	10	175,000	127,540	180,655	428
Number 1—North, .....	Shaft, .....	Gaseous, ..	5 Fans, ..	20* 20* 10 15*	12 16 2.6 4	90 76 180 72	2.7 2.7 2.3 2.2	Guibal, .... Guibal, .... Guibal, .... Candell, .... Guibal, ....	Steam, .....	11	195,880	156,000	205,000	360
Delaware, Lackawanna and Western Railroad Co. Auchincloss Colliery:	Shaft, .....	Gaseous, ..	Fan, .....	25	8	82	2.6	Guibal, ....	Steam, .....	11	232,800	188,080	263,620	427
Number 1, .....	Shaft, .....	Gaseous, ..	Fan, .....	35	9.60	42	2	Guibal, ....	Steam, .....	2	75,400	55,100	76,400	70
Number 2, .....	Shaft, .....	Gaseous, ..	Fan, .....	35	9.2	52	2	Guibal, ....	Steam, .....	20	200,000	194,000	210,000	64
Bliss Colliery:	Shaft, .....	Gaseous, ..	Fan, .....	24	4.3	72	1.6	Guibal, ....	Steam, .....	7	164,000	143,500	183,000	679
Bliss, .....	Tunnel, ....	Gaseous, ..	Fan, .....	25	7	69	2.1	Guibal, ....	Steam, .....	20	378,800	204,426	428,000	384
Truesdale Colliery:	Shaft, .....	Gaseous, ..	Fan, .....	25	7.7	80	2.2	Guibal, ....	Steam, .....	8	168,000	156,000	177,000	260
Number 1, .....	Shaft, .....	Gaseous, ..	Fan, .....	16	5	90	2	Jeffrey, ....	Steam, .....	8	136,000	107,400	140,400	160
Number 2, .....	Slope, ....	Gaseous, ..	Fan, .....	12	5	125	2.6	Jeffrey, ....	Steam, .....	4	48,800	37,800	61,800	120
Number 3, .....	Slope, ....	Gaseous, ..	Fan, .....	12	3.3	124	.8	Open run- ning	Electricity, ..	2	78,000	78,000	80,000	129
Number 4, .....	Slope, ....	Gaseous, ..	Fan, .....	12	3	125	.7	ing	Electricity, ..	5	107,070	93,305	108,790	178
Number 5, .....	Tunnel, ....	Gaseous, ..	Fan, .....	16	4	80	.9	Guibal, ....	Steam, .....	2	15,100	14,000	16,000	69
Number 6, .....	Drift, ....	Gaseous, ..	Fan, .....	16	2	150	.4	Stine, ....	Electricity, ..	2	65,000	51,000	67,000	42
Number 7, .....	Drift, ....	Non-gas, ..	Fan, .....	4.5	4	60	.8	Guibal, ....	Steam, .....	2	62,500	60,000	66,000	111
Number 8, .....	Drift, ....	Non-gas, ..	Fan, .....	8	5	130	1.4	Jeffrey, ....	Electricity, ..	2	11,000	9,200	13,000	41
Number 9, .....	Drift, ....	Non-gas, ..	Fan, .....	4	1.6	150	.5	Paffalo, ....	Electricity, ..	3	97,300	80,500	100,500	110
Number 10, .....	Drift, ....	Non-gas, ..	Fan, .....	15	4.6	90	.8	Guibal, ....	Electricity, ..	1	4,200	3,100	4,300	6
Number 11, .....	Slope, ....	Non-gas, ..	Natural, ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lehigh and Wilkes-Barre Coal Co. Wanamie Colliery:	Slope, ....	Gaseous, ..	Fan, .....	24	8	70	1.8	Guibal, ....	Steam, .....	11	131,175	117,275	144,075	318
Number 1, .....	Drift, ....	Gaseous, ..	Fan, .....	24	8	70	1.5	Guibal, ....	Steam, .....	1	20,200	18,000	22,500	26
Number 2, .....	Slope, ....	Gaseous, ..	Fan, .....	24	8	70	1.5	Guibal, ....	Steam, .....	1	96,000	92,100	101,000	192
Number 3, .....	Drift, ....	Gaseous, ..	Fan, .....	24	8	70	1.5	Guibal, ....	Steam, .....	1	23,150	20,000	24,500	24
Number 4, .....	Drift, ....	Gaseous, ..	Fan, .....	24	8	70	1.5	Guibal, ....	Steam, .....	1	28,200	26,500	31,400	21
Number 5, .....	Drift, ....	Gaseous, ..	Fan, .....	24	8	70	1.5	Guibal, ....	Steam, .....	1	5,600	4,100	5,750	10
Number 6, .....	Tunnel, ....	Gaseous, ..	Fan, .....	8	3	35	.5	Guibal, ....	Steam, .....	1	5,600	4,100	5,750	10

\*Fan used to ventilate mines at the different collieries.

TABLE I—Continued

Names of Operators and Mines	Kind of opening	Gaseous or non-gaseous	Method of ventilation	Diameter of fan in feet and inches	Width of blades in feet and inches	Depth of blades in feet and inches	Number of revolutions per minute	Water gauge developed—in inches	Name of fan	Power used	Number of splits of air currents	Number of cubic feet of air per minute entering the mine at inlet	Total number of cubic feet of air per minute circulating in all the splits	Number of cubic feet of air per minute passing out at outlet	Number of persons employed inside
Allen Coal Co. Number 1, ..... Number 2, ..... Baltimore, .....	Shaft, .....	Gaseous, ..	Fan, .....	15	5.1	4.8	84	2.2	Gulbal, ....	Steam, .....	6	60,800	36,100	63,000	129
	Shaft, .....	Gaseous, ..	2 Fans, } .....	24	8	5.10	66	1.2	Gulbal, ....	Steam, .....	13	195,000	190,000	210,000	265
	Slope, .....	Non-gas., .	Fan, .....	15	5.1	4.8	36	1	Gulbal, ....	Steam, .....	1	11,960	11,700	12,100	37
E. S. Stackhouse Coal Co. Salem Colliery: Pemberton, ..... Ross, ..... Upper Paddy Run, ..... Middle Paddy Run, ..... Biddle, ..... Churchway, ..... Ross Split, ..... Log, ..... Number 3, .....	Drift, .....	Non-gas., .	Natural, ..	.....	.....	.....	.....	.....	.....	.....	[ 1 1 1 1 1 1 1 1 ]	9,500	8,100	†	12
												4,000	3,500	†	6
												8,252	8,000	8,300	29
												4,666	4,100	†	9
												6,000	5,200	†	6
												11,333	10,000	†	28
												4,100	3,800	4,300	31
												4,000	3,200	4,250	29
												4,100	6,800	†	

†Broadcast.

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	Name of General Superintendent	Post Office	Name of Superintendent	Post Office	Railroad to Mine
Susquehanna Coal Co. Numbers 5, 6, 7, ..... }	Luzerne, ...	Robert A. Quin, .....	Wilkes-Barre, .....	Francis H. Kohlbra- ker,	Nanticoke, .....	Pennsylvania
Delaware, Lackawanna and Western Railroad Co. Archinocloss, ..... }	Luzerne, ...	{ R. A. Phillips, General Manager, C. E. Tobey, Gen- eral Superintendent }	Scranton, .....	H. G. Davis, .....	Kingston, .....	D. L. and W.
West End Coal Co. West End Washery, ..... }	Luzerne, ...	H. A. Fillmore, .....	Shickshinny, .....	.....	.....	Penna. and C. R. R. of N. J.
Lehigh and Wilkes-Barre Coal Co. Wanamie, ..... }	Luzerne, ...	C. F. Huber, .....	Wilkes-Barre, .....	E. J. Newbaker, ....	Wilkes-Barre, .....	C. R. R. of N. J.
Alden Coal Co. Alden, ..... }	Luzerne, ...	K. M. Smith, .....	Alden Station, .....	K. M. Smith, .....	Alden Station, .....	C. R. R. of N. J.
E. S. Stackhouse Coal Co., Salem, ..... }	Luzerne, ...	E. S. Stackhouse, ....	Shickshinny, .....	{ Peter F. Mitchell, Inside, W. S. Ritter, Out- side, }	Shickshinny, .....	D. L. and W.

TABLE 2.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured, quantity of powder, dynamite and permissible explosives used, etc.

Names of Operators and Collieries	County	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives				Number of horses and mules
										Number of pounds of powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used		
Susquehanna Coal Co.	{ Luzerne, ... }	Number 5, .....	78,478	19,158	425,363	216	1,213	5	5	266,935	24,325	4,485	111	
		Number 6, .....	46,489	5,225	533,507	219	1,154	6	9	319,625	19,475	15,657	77	
		Number 7, .....	310,804	60,374	.....	371,178	201	1,106	3	7	156,950	15,663	46,765	106
Nanticoke Washery,	Luzerne, .....	1,120,324	185,341	24,383	1,300,048	.....	3,503	14	21	723,500	59,463	66,907	294	
Totals,	Luzerne, .....	157,014	2,604	.....	159,648	288	62	.....	.....	.....	.....	.....	.....	
Delaware, Lackawanna and Western Railroad Co.	{ Luzerne, ... }	.....	187,945	24,383	1,489,696	.....	3,565	14	21	723,500	59,463	66,907	294	
Auchincloss, .....		14,575	7,315	202,541	187	506	1	.....	.....	73,875	4,969	53,025	39	
Bliss, .....		28,544	2,507	404,391	245	895	2	.....	.....	17,747	19,150	70	77	
Truesdale, .....	.....	807,711	27,158	394	835,263	249	1,816	7	1	90,767	654,885	94,150	45	
Totals,	.....	1,361,702	70,277	10,216	1,442,195	.....	3,397	10	3	460,817	677,601	166,325	154	
West End Coal Co.	Luzerne, .....	.....	39,000	8,662	533,561	211	1,141	9	3	232,225	49,200	103,400	44	
Leligh and Wilkes-Barre Coal Co.	Luzerne, .....	.....	45,415	3,034	510,835	216	818	1	2	250,450	15,705	71,156	115	
Wanamie, .....		.....	462,386	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

[illegible]



TABLE 2.—Part 2

Names of Operators	County	Number of Boilers				Locomotives			Total horse power	Number of steam engines of all classes	Total horse power	Number of pumps delivering water to surface	Capacity in gallons per minute	Quantity delivered to surface per minute gallons	Number of electric dynamos	Number of air compressors
		Cylindrical	Horse power	Tubular	Horse power	Total horse power	Steam	Air	Electric							
Susquehanna Coal Co., .....	Luzerne,	33	1,155	47	12,014	13,169	14	15	9	91	13,585	7	7,150	4,250	6	11
Delaware, Lackawanna and Western Railroad Co., .....		.....	.....	12	5,318	5,318	.....	.....	44	56	9,163	6	9,780	8,380	7	7
West End Coal Co., .....		.....	.....	10	3,200	3,200	6	.....	14	28	2,410	.....	3,700	2,300	5	3
Lobitz and Wilkes-Barre Coal Co., .....		.....	.....	10	1,676	1,676	2	.....	.....	46	2,900	2	4,492	2,400	.....	.....
Alden Coal Co., .....		.....	.....	11	2,282	2,282	2	.....	.....	9	1,275	2	1,500	1,400	.....	4
E. S. Stackhouse Coal Co., .....		.....	.....	2	100	100	.....	.....	4	1	270	.....	100	.....	1	.....
Totals, .....		33	1,155	93	24,670	25,825	27	15	71	231	29,752	27	27,222	19,370	19	25

\*Use gasoline engines inside for haulage purposes.

TABLE 3 — Number of each class of employees inside and outside of mines

Names of Operators	County	Inside										Outside										Grand total inside and outside	
		Mine foremen	Assistant mine foremen	Fire bosses and assistants	Miners	Miners' laborers	Drivers and runners	Doorboys and helpers	Pumpmen	Company men	All other employees	Total inside	Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Slatepickers (boys)	Slatepickers (men)	Bookkeepers and clerks	All other employees	Total outside		
Susquehanna Coal Co., ...	Luzerne, ...	4	10	35	811	732	252	47	20	45	506	2,462	1	5	91	180	140	29	18	639	1,103	3,565	
Delaware, Lackawanna and		6	4	30	953	1,109	87	46	13	539	....	2,787	....	4	30	60	125	8	11	282	520	3,307	
Western Railroad Co., ..		3	6	2	360	230	35	10	11	182	....	887	1	2	17	37	35	86	4	122	304	1,141	
West End Coal Co., .....		1	2	6	295	159	53	29	5	86	....	636	....	1	7	23	39	7	4	101	182	818	
Lehigh and Wilkes-Barre		1	1	5	204	167	87	15	5	....	62	547	....	1	10	31	34	22	8	65	172	719	
Coal Co., .....		1	1	....	45	45	14	....	....	9	....	115	1	1	4	5	7	4	3	38	63	178	
Alden Coal Co., .....	E. S. Stackhouse Coal Co.,	16	24	78	2,668	2,442	526	147	54	861	568	7,384	4	14	159	336	380	156	48	1,247	2,344	9,728	
E. S. Stackhouse Coal Co.,		Totals, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	



TABLE 4.—Fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 17	Thos. Baron, .....	Polish, .....	Laborer, ..	29	M.	1	...	Wanamie, .....	Luzerne, ...	Killed by fall of slate 50 feet back from face of working place.
	Polish Wyzoski, .....	Polish, .....	Laborer, ..	21	S.	...	...	Number 6, .....		Killed by fall of rock at face of gangway.
18	Andrew Kanyuck, ....	Slovakian, ..	Runner, ...	18	S.	...	...	Number 7, .....		Fatally injured by being squeezed between platform and car on gangway.
23	Wadic Simstick, .....	Polish, .....	Laborer, ..	25	S.	...	...	Auchincloss, .....		Killed by car at face of slope. The car was bumped over the end of the road and squeezed him against the face.
Feb. 25	Barney Dombroski, ...	Polish, .....	Brattice-man.	36	M.	1	5	Truesdale, .....		Killed by explosion of gas along gangway road.
	Joseph Swartz, .....	Polish, .....	Brattice-man.	34	S.	...	...	Truesdale, .....		Killed by blast at face of chamber.
March 18	Constanty Tobinski, ..	Polish, .....	Miner, .....	26	S.	...	...	West End, .....		Killed by falling down chamber manway.
21	John Siffer, .....	German, .....	Miner, .....	33	M.	1	4	West End, .....		Killed by falling down chamber manway.
26	Leon Keatkowski, ...	Polish, .....	Miner, .....	32	M.	1	5	West End, .....		Drowned. He fell into pitching chamber, which was partly filled with water.
June 3	John Krietski, .....	Polish, .....	Miner, .....	24	S.	...	...	West End, .....		Fatally injured by fall of rock at face of working place.
13	Lawrence Tokack, ....	Austrian, ..	Miner, ....	51	M.	1	5	Bliss, .....		Killed by fall of rock on gangway while pulling it down.
19	Marion Buchkopsky, ...	Polish, .....	Laborer, ..	27	S.	...	...	Number 6, .....	Luzerne, ...	Killed by premature blast at face of chamber.
	Mike Koplan, .....	Polish, .....	Miner, ....	33	M.	1	1	West End, .....		Killed by scraper line. Outside.
20	Frank Robbins, .....	American, ...	Cluteman, ...	17	S.	...	...	West End, .....		Fatally injured by being squeezed by derailed car on gangway.
24	Lawrence Wasioleski	Polish, .....	Runner, ...	18	S.	...	...	Number 7, .....		Fatally injured by being squeezed between car and truck of timber. Outside.
27	Joseph E. Davls, .....	American, ..	Headman, ...	18	S.	...	...	Truesdale, .....		Killed by being squeezed between railroad car and upright under breaker. Outside.
July 5	Mike Cherka, .....	Russian, ...	Loader, ...	30	M.	1	1	Alden, .....		Killed by premature blast at face of chamber.
9	Thomas Sudy, .....	Polish, .....	Miner, ....	41	M.	1	5	Number 7, .....		Killed by fall of rock at face of chamber.
Aug. 8	Steve Buchkoski, ....	Polish, .....	Miner, ....	30	M.	1	1	Number 6, .....		Killed by fall of rock at face of chamber.
Sept. 10	Nick Angelo, .....	Italian, .....	Miner, ....	35	M.	1	5	West End, .....		Killed by fall of rock at face of chamber.

TABLE 4—Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Sept. 12	Frank Yorwoski, ....	Polish, ....	Miner, ....	43	M.	1	1	West End, .....	Luzerne, ...	Fatally burned by gas in chamber.
17	Samuel Lloyd, .....	American, ..	Miner, ....	18	S.	....	....	Truesdale, .....		Electrocuted by trolley wire, 250 volts.
Oct. 2	Ignatz Bloom, .....	Polish, ....	Miner, ....	44	M.	1	5	Number 5, .....		Killed by fall of rock at face of chamber.
	Daniel Shellhamer, ...	American, ..	Laborer, ..	68	M.	1	....	Number 6, .....		Fatally injured by timber falling on him.
	Joseph Rybenski, ....	Polish, ....	Doorboy, ..	17	S.	....	....	Truesdale, .....		Outside.
	Lejold Moxie, .....	American, ..	Brakeman, ..	19	S.	....	....	Number 6, .....		Killed by cars on gangway road.
	Joseph Ganlan, .....	Lithuanian, ..	Miner, ....	26	S.	....	....	Truesdale, .....		Killed by falling under locomotive. Out-
25	Lewis Panetta, .....	Italian, ....	Chargeman, ..	25	S.	....	....	Illiss, .....		side.
Nov. 7	John R. Williams, ...	American, ..	Miner, ....	62	S.	....	....	West End, .....		Killed by fall of coal at working face.
	John Swetz, .....	Russian, ....	Loader, ....	54	M.	1	....	Number 6, .....		Fatally injured by premature blast at face </td
	Frederick Smith, ....	American, ..	Miner, ....	30	M.	1	3	Number 5, .....		of tunnel.
	Frank Osionak, .....	Slavonian, ..	Miner, ....	39	M.	1	2	West End, .....		Fatally injured by being kicked by mule.
	Fred Dudeck, .....	American, ..	Driver, ....	17	S.	....	....	Number 5, .....		Killed by fall of rock at face of chamber.
Dec. 29	Joe Span, .....	Italian, ....	Laborer, ..	28	M.	1	2	Number 5, .....	Luzerne, ...	Fatally injured by being squeezed between
	John Bechinski, .....	Polish, .....	Laborer, ..	65	M.	1	....	Number 5, .....		car and locomotive, outside.
										Fatally injured by fall of rock at face
										while helping miner to stand props.



TABLE 5.—Non-fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 5	Mike Lisko, .....	Slavonian, ..	Laborer, .....	50	M.	West End, .....	Luzerne, ...	Skull fractured by falling off locomotive. Outside.
8	Edward Palaz, .....	Polish, .....	Miner, .....	32	M.	Wanamie, .....		Leg broken by fall of slate.
15	Constantin Pnyarovit, .....	Polish, .....	Slatepicker, .....	17	S.	Number 7, .....		Arm fractured by falling off ladder. Outside.
16	Louis Kessler, .....	American, ..	Driver, .....	22	S.	Number 7, .....		Arm broken by being kicked by mule on gangway road.
17	Stanley Crook, .....	American, ..	Driver, .....	21	S.	Number 7, .....		Arm broken by being squeezed between car and mule on gangway road.
18	Michael Yozorick, ....	Polish, .....	Oiler, .....	63	M.	Number 5, .....		Injured by being squeezed between car and shaver frame. Outside.
25	Frank Welsh, .....	American, ..	Slatepicker, .....	14	S.	Number 6, .....		Leg broken by being caught by revolving shaft while playing with it. Outside.
Feb. 5	Joseph Yerkoff, .....	Polish, .....	Miner, .....	60	M.	Number 5, .....		Leg broken by being squeezed between tie and car at face of chamber.
13	Elmer Welsh, .....	American, ..	Miner, .....	43	M.	West End, .....		Arm broken by falling under car on chamber road.
March 1	Anthony Orziteski, ...	Polish, .....	Miner, .....	36	M.	Number 6, .....		Leg broken by fall of coal at face of chamber.
12	Henry Linn, .....	German, ....	Driver, .....	20	S.	Alden, .....	Luzerne, ...	Jaw fractured by being kicked by mule on chamber road.
14	Frank Szarkus, .....	Lithuanian, ..	Laborer, .....	19	S.	Number 6, .....		Skull fractured by premature blast near face of chamber.
15	Frank Gray, .....	Polish, .....	Miner, .....	27	M.	Number 6, .....		Head and leg injured by fall of rock at face of chamber.
June 7	David A. Jones, .....	Welsh, .....	Laborer, .....	21	S.	Number 7, .....		Injured by telephone pole falling on him. Outside.
14	John Gurski, .....	German, ....	Runner, .....	19	S.	Number 5, .....		Internally injured by falling off mine car on gangway.
25	Anthony Rachunas, ..	Lithuanian, ..	Brakeman, .....	20	S.	Number 6, .....		Leg broken by being squeezed between derailed car and motor on gangway.
28	John Lazork, .....	Polish, .....	Mason, .....	24	M.	Truesdale, .....		Collar bone and two ribs broken by falling from scaffold.
July 1	Mike Shust, .....	Polish, .....	Miner, .....	53	S.	Number 7, .....		Ankle broken by fall of rock at face of chamber.

TABLE 5—Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
July	6 Peter Muzikewety, ...	Lithuanian,	Miner, .....	55	M	Number 6, .....	Luzerne, ...	Ankle broken by fall of rock at face of chamber.
29	Martin Tatarski, .....	Polish, .....	Miner, .....	53	M.	Number 5, .....		Leg injured by fall of coal at face of chamber.
31	George Bedmarsi, ..	Polish, .....	Miner, .....	40	M.	Number 6, .....		Leg broken by derailed car on chamber road.
Aug.	8 John Shipcofski, ....	Polish, .....	Driver, .....	19	S.	Number 7, .....	Luzerne, ...	Arm fractured by being thrown against rib on gangway by mule.
13	Florance Rutcofski, ..	Polish, .....	Driver, .....	19	S.	Number 7, .....		Arm fractured by being caught between car and cross timber on gangway.
Sept.	5 Thomas Jenkins, ....	American, ..	Runner, .....	22	S.	West End, .....		Jaw fractured by being squeezed between cars on gangway.
11	John Warchol, .....	Polish, .....	Miner, .....	35	M.	Alden, .....	Luzerne, ...	Leg fractured by fall of rock at face of chamber.
Oct.	2 Felix Gorboleski, ...	Polish, .....	Laborer, .....	24	S.	Bliss, .....		Back injured by fall of coal at face of chamber.
18	Peter Kushlob, .....	Polish, .....	Driver, .....	28	M.	Wanamie, .....		Three fingers cut off by cars on gangway.
Nov.	22 John Horlocher, ....	American, ..	Motorman, ..	47	S.	Salem, .....	Luzerne, ...	Skull fractured by being struck by trolley pole, outside.
25	Joe Bialko, .....	Slavonian, ..	Brakeman, ..	19	S.	Number 5, .....		Four fingers smashed by being run over by cars on gangway.
Dec.	3 John Steppanski, ....	Polish, .....	Miner, .....	42	M.	Bliss, .....		Leg fractured by fall of coal at face of chamber.
4	Charles Zabowitz, ....	Lithuanian, ..	Miner, .....	36	M.	Number 6, .....	Luzerne, ...	Leg fractured by fall of coal at face of chamber.
7	Constatine Karsmiski, ..	Polish, .....	Miner, .....	29	M.	Number 6, .....		Arm fractured by being struck by prop that rolled off car at face of chamber.

## CONDITION OF COLLIERIES

## SUSQUEHANNA COAL COMPANY

Number 5 Colliery.—Ventilation and condition as to safety good. Roads and drainage fair.

Number 6 Colliery.—Ventilation, roads and drainage, fair. Condition as to safety, good.

Number 7 Colliery.—Ventilation fair. Roads and drainage, good. Condition as to safety, good.

## DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Auchincloss Colliery.—Ventilation, roads, drainage and general conditions, good.

Bliss and Truesdale Collieries.—Ventilation and condition as to safety, good. Roads and drainage, fair.

## WEST END COAL COMPANY

West End Colliery.—Ventilation, roads and drainage, fair. Condition as to safety, good.

## LEHIGH AND WILKES-BARRE COAL COMPANY

Wanamie Colliery.—Ventilation, roads, drainage and general condition, good.

## ALDEN COAL COMPANY

Alden Colliery.—Ventilation, good. Roads and drainage, fair. Condition as to safety, good.

## E. S. STACKHOUSE COAL COMPANY

Salem Colliery.—Ventilation, roads and drainage, fair. Condition as to safety, good.

## IMPROVEMENTS

## SUSQUEHANNA COAL COMPANY

Number 5 Colliery.—Seventy-five new steel body mine cars were added to equipment. Built new retail coal pockets for the purpose of handling more retail coal and coal mined by the West Nanticoke Coal Company. This Company loads the coal in gondolas and it is transported from West Nanticoke to East Nanticoke, dumped in above pockets, reloaded into mine cars and prepared for market in No. 5 breaker.

In No. 8 tunnel 100 sets steel timber were placed.

No. 21 plane in No. 2 shaft was driven 77 yards.

The Mills slope in No. 4 slope was driven 115 yards.

Second opening No. 3 rock plane at Stearns was driven 254 yards and completed.

No. 4 slope in No. 4 shaft was driven 88 yards.

Number 6 Colliery.—Installed in breaker new dump shakers and a new dust fan.

One hundred twenty-five new steel body mine cars were added to equipment.

No. 22 tunnel, No. 6 slope, was driven 129 yards, and a 10 by 5 double inlet fan, driven by electricity, was erected for the purpose of ventilating the workings therein.

No. 3 rock plane, No. 6 slope, was driven 60 yards and completed.

No. 35 tunnel, No. 7 shaft, was driven 54 yards and completed.

New airway No. 11 slope, No. 7 shaft, was driven 137 yards and completed.

A new hoisting engine and engine house were erected at the head of No. 7 shaft.

No. 9 slope, No. 7 shaft, was driven 68 yards.

Number 7 Colliery.—Installed in breaker new spiral slate pickers, new dump shakers and a new dust fan.

Installed in electric power house: 1 motor, 2 generators and 2 Ridgway electric engines, 10 by 10 and 25 by 24.

Placed in North and South shafts 64 sets steel timber—40 sets at foot of North shaft and 24 sets in South shaft barn.

No. 29 slope, North shaft, was driven 171 yards and completed.

No. 31 slope, South shaft, was driven 100 yards.

Nanticoke Washery.—The washery was completed and began operations May 22.

#### DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Auchincloss Colliery.—The 35-foot ventilating fan referred to in last year's report is now in running order.

All mule barns, pump-rooms, hoist-rooms, etc., have been reconstructed of concrete and steel.

Bliss Colliery.—The concrete and brick partition separating hoistway and airway in this shaft is completed to the surface.

Built a new brick and concrete supply storeroom. Completed the rebuilding of mule barns, etc., reported under way in last year's report.

Several rock tunnels driven for development and ventilation purposes.

The hoisting engines on the shaft have been equipped with Welch automatic engine stop.

Truesdale Colliery.—The work of reconstructing this breaker with steel is now completed.

Shaft hoisting engines have been equipped with the Welch automatic engine stop.

Several rock tunnels have been driven for development purposes, return airway, and second openings, from Mills to George vein, Ross to Red Ash vein and from Forge to Baltimore vein.

At No. 20 tunnel, Sugar Notch, Truesdale mine, the work of driving through to Red Ash vein was completed during the early part of the year.



The parallel tunnel being driven from the Twin to Red Ash vein is about completed. It will serve as a second opening and return for the seams intervening between this vein and the Bottom Red Ash split.

The surface improvements consist of a brick and concrete powder house, a brick and concrete oil house, and a brick and concrete foreman and assistant foreman's office and lamp-room, all of which are considered fireproof.

Installed in the outcrop of Red Ash vein a 12-foot open-end running fan, electrically driven by belt connection.

#### LEHIGH AND WILKES-BARRE COAL COMPANY

Wanamie Colliery.—Completed Nos. 3 and 6 slope pumping plants.

No. 12 tunnel extended to Stanton.

No. 29 tunnel driven Baltimore to Cooper.

No. 28 tunnel driven and outside plane.

#### ALDEN COAL COMPANY

Alden Colliery.—One set 300 horsepower Harrisburg boilers.

New boiler house at No. 2 shaft.

One 20 by 12½ by 20 by 24 inch Norwalk air compressor.

One 7 ton Milwaukee gasoline locomotive.

One 12 by 6 by 12 inch Goyne pump.

Two 8½ by 12 inch Webster, Camp and Lane friction hoists.

#### PROSECUTIONS FOR VIOLATIONS OF THE MINE LAWS

December 18. Joe Wintergrass was prosecuted for swearing falsely to the age of his son. He entered a plea of guilty and was sentenced to pay the costs.

December 18. Frank Lavopis was prosecuted for swearing falsely to the age of his son. He entered a plea of guilty and was sentenced to pay the costs.

#### Commonwealth of Pennsylvania vs. Stackhouse Coal Company

The Stackhouse Coal Company erected a new breaker in Shickshinny, and, in violation of Section 2, Article 5, Act of June 2, 1891, were erecting a steam heat plant with boilers for the generation of steam less than 50 feet from said breaker. Under the law I served the required notice on the Company and notified them not to proceed with the erection of said steam plant, as, when operated, it would be a direct violation of the law.

I petitioned the court to issue an injunction to restrain the Stackhouse Coal Company from erecting said steam plant and generating steam therein nearer than 100 feet from said breaker. The Company in their answer to bill of complaint denied "that the steam plant in question when erected less than 50 feet from said breaker would be a violation of Section 2, Article 5, Act of June 2, 1891."

The plaintiff and the defendant agreed "that the Bill of Complaint and the Answer thereto should be submitted to the Court of Common Pleas of Luzerne County for judgment thereon, and that they would be bound by the decision of the court.



The court decided as follows:

### “ADJUDICATION

The question involved in this proceeding and brought before the Court for decision by amicable concurrence of the parties, is whether boilers used to generate steam at a comparatively low pressure for the purpose of heat and not at a high pressure for the purpose of power, are embraced within the prohibition of the Anthracite Mining Act of June 2nd, 1891 (P. L. 176), Section 2, Article V, (P. L. 187), when such boilers are placed nearer than 100 feet to coal breaker in which persons are employed in the preparation of coal.

That section explicitly approves “It shall not be lawful to place any boiler or boilers for the purpose of generating steam, under or nearer than 100 feet to any coal breaker or other structure in which persons are employed in the preparation of coal.”

There is no discrimination here between high pressure and low pressure, steam for heat and steam for power, nor do any circumstances appear to warrant the Court in declaring that the proposal of the defendant does not violate the spirit as well as the letter of the enactment.

On the facts averred in the bill, admitted in the answer, and here found to be true without formal repetition, we concluded without difficulty, as a matter of law, and accordingly decree that the defendant be restrained by permanent injunction from placing any boiler or boilers for the purpose of generating steam nearer than 100 feet to its coal breaker.

By the Court.”

## ELEVENTH DISTRICT

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LUZERNE COUNTY

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Hazleton, Pa., February 20, 1913.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor of transmitting herewith my Annual Report as Inspector of Mines for the Eleventh Anthracite District, for the year ending December 31, 1912.

Respectfully submitted,

DAVID J. RODERICK, Inspector.

## SUMMARY OF STATISTICS

Number of collieries, .....	20
Number of mines, .....	87
Number of mines in operation, .....	85
Number of tons of coal shipped to market, .....	4,439,438
Number of tons used at mines for steam and heat, .....	645,846
Number of tons sold to local trade and used by employes, .....	140,911
Number of tons produced, .....	5,226,195
Number of tons produced by compressed air machines, ..	.....
Number of tons produced by electrical machines, .....	.....
Number of persons employed inside of mines, .....	7,347
Number of persons employed outside, .....	3,557
Number of fatal accidents inside of mines, .....	19
Number of fatal accidents outside, .....	10
Number of non-fatal accidents inside of mines, .....	51
Number of non-fatal accidents outside, .....	14
Number of tons of coal produced per fatal accident inside, ..	275,063
Number of tons produced per fatal accident outside, ....	522,619
Number of tons produced per fatal accident inside and outside, .....	180,214
Number of persons employed per fatal accident inside, ..	387
Number of persons employed per fatal accident outside, ..	356
Number of persons employed per fatal accident inside and outside, .....	376
Number of persons employed per non-fatal accident inside, ..	144
Number of persons employed per non-fatal accident outside, ..	254
Number of persons employed per non-fatal accident inside and outside, .....	167
Number of wives made widows, .....	19
Number of children made orphans, .....	47
Number of steam locomotives used inside of mines, ....	15
Number of steam locomotives used outside, .....	74
Number of compressed air locomotives used inside, .....	11
Number of compressed air locomotives used outside, ....	.....
Number of electric motors used inside, .....	26
Number of electric motors used outside, .....	.....
Number of fans in use, .....	49
Number of furnaces in use, .....	1
Number of gaseous mines in operation, .....	35
Number of non-gaseous mines in operation, .....	50
Number of new mines opened, .....	1
Number of old mines abandoned, .....	.....

## TABLE A

## PRODUCTION OF COAL

Names of Operators	Tons
G. B. Markle Company, .....	1,109,468
Lehigh Valley Coal Company, .....	1,007,226
Coxe Brothers and Company, Incorporated, .....	852,719
Pardee Brothers and Company, .....	565,466
A. Pardee and Company, .....	521,503
C. M. Dodson and Company, .....	351,750
Harwood Coal Company, .....	220,477
Upper Lehigh Coal Company, .....	138,106
M. S. Kemmerer and Company, .....	120,833
J. S. Wentz and Company, .....	113,360
Hazle Mountain Coal Company, .....	105,309
Harleigh Brookwood Coal Company, .....	74,669
Wolf Coal Company, .....	39,751
Thomas R. Reese and Son, .....	5,558
Total, .....	5,226,195

## Production by Counties

Luzerne, .....	5,226,195
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TABLE B.—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employees inside	Number of employees outside	Total number of employees	Number of employees inside per fatal accident	Number of employees outside per fatal accident	Number of employees inside per non-fatal accident	Number of employees outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
G. B. Markle Co., .....	6	3	9	18	4	22	184,911	61,637	1,505	521	2,026	251	174	84	130
Lehigh Valley Coal Co., .....	5	2	7	11	4	15	201,445	91,566	1,599	751	2,350	320	375	145	188
Coxe Brothers and Co., Inc., .....	1	2	3	1	1	2	852,719	852,719	878	503	1,381	878	251	878	503
Pardee Brothers and Co., .....	3	2	5	5	3	8	188,489	282,733	663	347	1,010	221	174	331	116
A. Pardee and Co., .....	2	1	3	4	...	4	260,751	130,376	953	478	1,431	477	478	238	...
C. M. Dodson and Co., .....	1	...	1	3	...	3	351,750	117,250	520	228	1,748	520	...	173	...
Harwood Coal Co., .....	...	...	...	3	...	3	73,492	73,492	328	137	465	...	...	109	...
Upper Lehigh Coal Co., .....	...	...	...	...	1	1	...	...	87	140	227	...	...	...	140
M. S. Kemmerer and Co., .....	...	...	...	3	...	3	40,278	40,278	180	101	281	...	...	60	...
J. S. Wentz and Co., .....	...	...	...	2	...	2	56,680	56,680	176	123	299	...	...	88	...
Hazle Mountain Coal Co., .....	1	...	1	1	...	1	105,309	105,309	215	110	325	...	...	215	...
Harleigh Brookwood Coal Co., .....	...	...	...	1	1	2	...	74,669	178	104	279	...	...	178	101
Wolf Coal Co., .....	...	...	...	2	...	2	...	19,876	59	14	73	...	...	29	...
Miscellaneous Companies, .....	...	...	...	...	...	...	...	...	6	3	9	...	...	...	...
Totals and averages for district, ...	19	10	29	51	14	65	275,063	102,474	7,347	3,557	10,904	387	356	144	254



TABLE C.—Classification of Fatal Accidents Inside and Outside of Mines

	Months												Totals	Percentages
	January	February	March	April	May	June	July	August	September	October	November	December		
<b>Causes of Accidents Inside</b>														
Falls of coal, .....			1			1			1		1		4	21.05
Falls of slate, .....							1		1		1		3	15.79
Mine cars, .....	1	1	1					1	1	1			6	31.58
Explosions of powder and dynamite, .....					1								1	5.27
Blasts, premature and otherwise, .....	1						1					1	3	15.79
Crushed at batteries, ..							1						1	5.26
Electricity, .....								1					1	5.26
<b>Totals, .....</b>	<b>2</b>	<b>1</b>	<b>2</b>		<b>1</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>19</b>	<b>100.00</b>
<b>Causes of Accidents Outside</b>														
Cars, .....									1			1	2	20.00
Machinery, .....		1						1				1	3	30.00
Rush of rock, .....		1											1	10.00
Struck by a pole, .....			1										1	10.00
Explosion of blast, .....						1							1	10.00
Rush of culm, .....								1					1	10.00
Fall of clay, .....										1			1	10.00
<b>Totals, .....</b>	<b>2</b>	<b>2</b>	<b>1</b>			<b>1</b>		<b>2</b>	<b>1</b>	<b>1</b>		<b>2</b>	<b>10</b>	<b>100.00</b>
<b>Grand totals inside and outside, .....</b>	<b>4</b>	<b>3</b>	<b>3</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>29</b>	<b>.....</b>

TABLE D.—Classification of Non-Fatal Accidents Inside and Outside of Mines

	Months												Totals	Percentages
	January	February	March	April	May	June	July	August	September	October	November	December		
<b>Causes of Accidents Inside</b>														
Falls of coal, .....	2							1	1	3	1		8	15.69
Falls of slate, .....	1	2						1	1	1	3	1	10	19.61
Mine cars, .....	1	2	1			1	1	2	1	1			11	21.57
Explosions of gas, .....			2									2	6	11.77
Explosions of powder and dynamite, .....	1								2			1	4	7.84
Blasts, premature and otherwise, .....	1		1				1			1			4	7.84
Falling into slopes etc., .....	1												1	1.96
Crushed at batteries, .....							1						1	1.96
Struck by a ram, .....	1												1	1.96
Caught in trace chain, ..	1												1	1.96
Struck by bar, .....			1										1	1.96
Struck by debris, ....	1									2			3	5.83
<b>Totals, .....</b>	<b>10</b>	<b>4</b>	<b>5</b>			<b>1</b>	<b>3</b>	<b>6</b>	<b>5</b>	<b>8</b>	<b>4</b>	<b>5</b>	<b>51</b>	<b>100.00</b>
<b>Causes of Accidents Outside</b>														
Cars, .....	1	3	1		2			1	1			1	10	71.43
Machinery, .....											1		1	7.14
Rush of coal, .....			2									2	2	14.29
Scalded by steam, ....											1		1	7.14
<b>Totals, .....</b>	<b>1</b>	<b>3</b>	<b>3</b>		<b>2</b>			<b>1</b>	<b>1</b>		<b>2</b>	<b>1</b>	<b>14</b>	<b>100.00</b>
<b>Grand totals inside and outside, .....</b>	<b>11</b>	<b>7</b>	<b>8</b>		<b>2</b>	<b>1</b>	<b>3</b>	<b>7</b>	<b>6</b>	<b>8</b>	<b>6</b>	<b>6</b>	<b>65</b>	<b>.....</b>

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Miners, .....	1	1	1	....	1	1	3	....	1	....	2	1	12
Miners' laborers, .....	....	....	....	....	....	....	....	1	1	1	....	....	3
Doorboys and helpers, .....	....	....	....	....	....	....	....	....	1	....	....	....	1
Engineers, .....	1	....	....	....	....	....	....	....	....	....	....	....	1
Couplers, .....	....	....	1	....	....	....	....	....	....	....	....	....	1
Stable bosses, .....	....	....	....	....	....	....	....	1	....	....	....	....	1
Totals, .....	2	1	2	....	1	1	3	2	3	1	2	1	19
Outside													
Carpenters, .....	....	....	1	....	....	....	....	....	....	....	....	....	1
Contractors, .....	....	1	....	....	....	....	....	....	....	....	....	....	1
Laborers, .....	....	1	....	....	....	1	....	....	....	....	....	....	2
Miners, .....	....	....	....	....	....	....	....	1	....	....	....	1	2
Shaker-tenders, .....	....	....	....	....	....	....	....	1	....	....	....	....	1
Switch boys, .....	....	....	....	....	....	....	....	....	1	....	....	....	1
Jackmen, .....	....	....	....	....	....	....	....	....	....	1	....	....	1
Machine tenders, .....	....	....	....	....	....	....	....	....	....	....	....	1	1
Totals, .....	....	2	1	....	....	1	....	2	1	1	....	2	10
Grand totals inside and outside, .....	2	3	3	....	1	2	3	4	4	2	2	3	29

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Miners, .....	7	3	4	.....	.....	.....	2	3	3	4	3	4	33
Miners' laborers, .....	.....	.....	1	.....	.....	.....	.....	1	1	1	1	.....	5
Drivers and runners, .....	1	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	3
Doorboys and helpers, .....	1	1	.....	.....	.....	1	.....	.....	.....	2	.....	1	6
Diamond drillers, .....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Repairmen, .....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1
Topmen, .....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
Motor helpers, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1
Totals, .....	10	4	5	.....	.....	1	3	6	5	8	4	5	51
Outside													
Foremen, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Blacksmiths and carpenters, .....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Engineers and firemen, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Patchers, .....	.....	1	1	.....	.....	.....	.....	.....	1	.....	.....	1	4
Laborers, .....	.....	2	2	.....	2	.....	.....	1	.....	.....	.....	.....	7
Totals, .....	1	3	3	.....	2	.....	.....	1	1	.....	2	1	14
Grand totals inside and outside, .....	11	7	8	.....	2	1	3	7	6	8	6	6	65

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	Totals
American, .....	1	1	2	...	...	...	...	1	...	...	...	6
German, .....	...	...	1	...	...	...	...	1	...	...	...	2
Polish, .....	...	...	...	...	...	...	...	1	2	...	...	3
Hungarian, .....	...	...	...	...	...	...	...	...	1	...	...	1
Italian, .....	...	1	...	...	1	...	1	1	1	2	1	9
Slavonian, .....	...	...	...	...	...	1	...	...	...	...	...	1
Lithuanian, .....	1	...	...	...	...	1	1	...	...	...	...	3
Austrian, .....	...	...	...	...	...	...	...	...	...	1	...	1
Russian, .....	...	1	...	...	...	...	...	1	...	...	1	2
Greek, .....	...	...	...	...	...	...	...	...	...	...	...	...
Totals, .....	2	3	3	...	1	2	3	4	4	2	2	29

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	Totals
American, .....	2	3	2	...	1	...	1	...	3	1	...	14
German, .....	...	...	...	...	1	...	...	...	...	1	...	2
Polish, .....	2	...	2	...	...	...	...	1	1	3	...	14
Hungarian, .....	...	1	...	...	...	...	...	...	...	1	1	8
Italian, .....	...	1	2	...	...	...	...	1	...	...	2	6
Slavonian, .....	2	...	...	...	...	...	1	2	1	1	...	10
Lithuanian, .....	1	...	...	...	...	...	...	...	...	...	...	3
Austrian, .....	...	...	...	...	...	...	...	...	...	1	...	1
Greek, .....	...	...	...	...	...	1	1	...	1	1	...	4
Tyrolean, .....	1	...	...	...	...	...	...	...	...	...	...	1
Spanish, .....	...	...	2	...	...	...	...	...	...	...	...	2
Totals, .....	11	7	8	...	2	1	3	7	6	8	6	65



Lehigh Valley Coal Co.									
Hazleton No. 1 Colliery:									
Hazleton No. 1, Fager	Slope,...	Gaseous, ..	Fan, .....	20	6.	6.	62	.8	{
Ridge,		Non-gas, ..	Fan, .....	16	6.	5.6	55	.4	{
Hazleton No. 8, .....		Gaseous, ..	Fan, .....	16	4.	4.6	50	.6	{
Hazleton Shaft Colliery:									
Hazleton Shaft,	Shaft, .....	Gaseous, ..	Fan, .....	20	7.	6.	65	.5	{
Hazleton Shaft,	Shaft, .....	Gaseous, ..	Fan, .....	20	7.	6.	65	.5	{
Hazleton No. 3, .....	Slope, .....	Gaseous, ..	Fan, .....	17	5.	6.	65	.5	{
Hazleton No. 5, .....	Slope, .....	Gaseous, ..	Fan, .....	14	4.9	4.	98	.5	{
Stockton No. 2, .....	Slope, .....	Non-gas, ..	Fan, .....	20	6.9	4.6	40	.5	{
Stockton No. 7, .....	Slope, .....	Non-gas, ..	Natural, ..	...	...	...	...	...	{
Spring Mountain and Spring Brook Colliery:									
Spring Brook No. 4, .....	Slope, .....	Non-gas, ..	Fan, .....	20	6.9	4.6	40	.5	{
Spring Brook No. 1, .....		Gaseous, ..	Fan, .....	16	4.	4.	69	.3	{
Spring Brook No. 2, .....		Gaseous, ..	Fan, .....	14	4.9	4.	70	.3	{
Cox Brothers and Co., Inc.									
Driftion Colliery:									
Driftion No. 1, .....	Slope, .....	Non-gas, ..	Fan, .....	16	4.	4.	69	...	{
Driftion No. 2, .....		Gaseous, ..	Fan, .....	20	4.	4.	89	...	{
Driftion No. 2, .....		Gaseous, ..	Fan, .....	17	4.	4.	89	...	{
Derlinger, Gowen and Tom- bickon Colliery:									
Derlinger, .....	Drift, .....	Non-gas, ..	Furnace, ..	...	...	...	...	...	{
Derlinger, .....	Drift, .....	Gaseous, ..	Fan, .....	20	6.	5.6	90	...	{
Gowen No. 1 and 3, .....	Tunnel, .....	Gaseous, ..	Fan, .....	16	4.	4.	109	...	{
Gowen No. 4, .....	Slope, .....	Gaseous, ..	Fan, .....	20	7.	6.	45	...	{
Eckley and Buck Mountain Colliery:									
Eckley No. 1, .....	Slope, .....	Non-gas, ..	Natural, ..	...	...	...	...	...	{
Eckley No. 2, .....		Non-gas, ..	Natural, ..	...	...	...	...	...	{
Eckley No. 6, .....		Non-gas, ..	Fan, .....	20	4.	4.	56	...	{
Eckley No. 10, .....		Non-gas, ..	Natural, ..	...	...	...	...	...	{
Buck Mountain No. 11, .....		Non-gas, ..	Natural, ..	...	...	...	...	...	{
Parlee Brothers and Co.									
Lattimer Colliery:									
Lattimer No. 1, .....	Slope, .....	Non-gas, ..	Natural, ..	...	...	...	...	...	{
Lattimer No. 3, .....	Slope, .....	Non-gas, ..	Natural, ..	...	...	...	...	...	{
Lattimer No. 8, .....	Slope, .....	Non-gas, ..	Natural, ..	...	...	...	...	...	{
Lattimer Nos. 9 and 12, .....	Slopes, .....	Gaseous, ..	Fan, .....	16	4.6	4.3	95	1.6	{
Lattimer No. 11, .....	Slope, .....	Non-gas, ..	Natural, ..	...	...	...	...	...	{
Lattimer No. 22, .....	Slope, .....	Non-gas, ..	Fan, .....	6	3.25	1.42	130	1.	{
Lattimer No. 22, .....	Slope, .....	Non-gas, ..	Fan, .....	8	3.25	1.67	145	1.	{

\*Rolling; no air measurements taken.



TABLE I—Continued

Names of Operators and Mines	Kind of opening	Gaseous or non-gaseous	Method of ventilation	Diameter of fan in feet and inches	Width of blades in feet and inches	Depth of blades in feet and inches	Number of revolutions per minute	Water gauge developed—in inches	Name of fan	Power used	Area of furnace bats in square feet	Number of splits of air currents	Number of cubic feet of air per minute entering the mine at inlet	Total number of cubic feet of air per minute circulating in all the splits	Number of cubic feet of air per minute passing out at outlet	Number of persons employed inside
Lattimer No. 24	Slope	Non-gas.	Fan.	6	3.25	1.42	195	1.	Gubal,	Electricity.	...	...	28,000	22,000	30,000	38
Lattimer No. 25	Slope	Non-gas.	Fan.	6	3.25	1.42	195	1.	Gubal,	Electricity.	...	...	22,000	22,000	30,000	21
Lattimer No. 17	Shaft	Non-gas.	Fan.	6	3.25	1.42	195	1.	Gubal,	Electricity.	...	...	22,000	22,000	30,000	53
A. Pardee and Co.																
Cranberry Colliery:																
Cranberry No. 1	Slope	Gaseous.	Fan.	16	4.	4.10	68	.8	Gubal,	Steam.	...	...	50,000	46,000	55,000	366
Cranberry No. 2	Slope	Gaseous.	Fan.	16	4.	5.4	70	.9			...	...	56,000	48,000	66,000	61
Cranberry Nos. 4 and 8	Slope	Gaseous.	Fan.	16	4.	4.9	50	.2			...	...	38,000	27,000	46,000	258
Cranberry Nos. 5 and 10	Slope	Gaseous.	Fan.	16	4.	4.10	68	.5			...	...	69,500	50,000	72,500	165
Cranberry Nos. 6 and 9	Slope	Non-gas.	Fan.	16	4.	4.6	70	.6			...	...	50,000	47,000	54,000	85
Cranberry No. 7	Slope	Gaseous.	Fan.	16	4.	4.6	60	.7			...	...	28,160	19,160	39,600	...
East Crystal Ridge No. 5		Non-gas.	Natural.	...	...	...	...	...			...	...	...	...	...	...
C. M. Dodson and Co.																
Beaver Brook Colliery:																
Beaver Brook No. 5	Slope	Non-gas.	Natural.	...	...	...	...	...			...	...	20,400	18,000	22,400	60
Beaver Brook No. 6	Slope	Non-gas.	Natural.	...	...	...	...	...			...	...	3,000	2,500	3,000	6
Beaver Brook No. 10	Slope	Non-gas.	Fan.	16	4.6	5.	90	...	Gubal,	Steam.	...	...	50,000	41,500	69,000	16
Beaver Brook No. 11	Slope	Gaseous.	Fan.	16	4.6	5.	80	...	Gubal,	Steam.	...	...	35,000	22,000	27,000	108
Beaver Brook No. 15	Slope	Gaseous.	Fan.	16	4.6	5.	90	...	Gubal,	Steam.	...	...	22,600	18,000	27,000	45
Harwood Coal Co.																
Harwood Colliery:																
Harwood No. 1	Slope	Non-gas.	Natural.	...	...	...	...	...			...	...	...	...	...	54
Harwood No. 5	Slope	Gaseous.	Natural.	...	...	...	...	...			...	...	...	...	...	167
Harwood No. 31	Slope	Non-gas.	Natural.	...	...	...	...	...			...	...	...	...	...	106

†Robbing; no air measurements taken.

Upper Lehigh Coal Co.									
Upper Lehigh Colliery:									
Upper Lehigh No. 1, ..	Fan, .....	10	3.	2.	70	.5	Guibal, .....	Steam, .....	.....
Upper Lehigh No. 2, ..	Natural, ..	.....	.....	.....	.....	.....	.....	.....	.....
Upper Lehigh No. 3, ..	Non-gas., ..	.....	.....	.....	.....	.....	.....	.....	.....
Upper Lehigh No. 7, ..	Slope, ....	.....	.....	.....	.....	.....	.....	.....	.....
new, .....	{	10	3.	2.	70	.5	Guibal, .....	Steam, .....	.....
M. S. Kemmerer and Co.									
Sandy Run Colliery:									
Sandy Run No. 2, ..	Natural, ..	.....	.....	.....	.....	.....	.....	.....	.....
Sandy Run No. 5, ..	{	.....	.....	.....	.....	.....	.....	.....	.....
Sandy Run No. 10, ..	Natural, ..	.....	.....	.....	.....	.....	.....	.....	.....
J. S. Wentz and Co.									
Hazle Brook Colliery:									
Hazle Brook No. 1, ..	{	.....	.....	.....	.....	.....	.....	.....	.....
Hazle Brook No. 2, ..	Gaseous, ..	.....	.....	.....	.....	.....	.....	.....	.....
Hazle Brook No. 3, ..	Non-gas., ..	.....	.....	.....	.....	.....	.....	.....	.....
Hazle Brook No. 5, ..	Gaseous, ..	.....	.....	.....	.....	.....	.....	.....	.....
Hazle Brook No. 8, ..	Non-gas., ..	.....	.....	.....	.....	.....	.....	.....	.....
Hazle Brook No. 9, ..	Non-gas., ..	.....	.....	.....	.....	.....	.....	.....	.....
Hazle Brook No. 10, ..	Non-gas., ..	.....	.....	.....	.....	.....	.....	.....	.....
Hazle Mountain Coal Co.									
Hazle Mountain Colliery:									
Hazle Mountain No. 1, ..	Slope, ....	16	6.	4.6	72	1.3	Guibal, .....	Steam, .....	.....
Hazle Mountain No. 5, ..	Slope, ....	16	4.	3.11	85	1.4	Guibal, .....	Steam, .....	.....
Harleigh Brookwood Coal Co.									
Harleigh Colliery:									
Buck Mountain No. 1, ..	{	12	3.7	3.	90	.5	Guibal, .....	Steam, .....	.....
Spear Point Primrose	{	7	3.	2.	298	.5	Buffalo, ..	Electricity, ..	.....
No. 2, Point Wharton	{	.....	.....	.....	.....	.....	.....	.....	.....
Spear No. 3, ..	{	7	3.	2.	298	.5	Buffalo, ..	Electricity, ..	.....
Fish Tail No. 4, ..	{	.....	.....	.....	.....	.....	.....	.....	.....
Pond Creek Colliery:									
Pond Creek No. 7, ..	Slope, ....	.....	.....	.....	.....	.....	.....	.....	.....
Pond Creek No. 8, ..	Slope, ....	.....	.....	.....	.....	.....	.....	.....	.....
Wolf Coal Co.									
Wolf Colliery:									
Wolf No. 3, ..	Slope, ....	12	3.	3.6	110	.1	Guibal, .....	Steam, .....	.....
Wolf No. 4, ..	Slope, ....	.....	.....	.....	.....	.....	.....	.....	.....
Thomas R. Reese and Son									
Dusky Diamond Colliery:									
Dusky Diamond No. 1, ..	Slope, ....	.....	.....	.....	.....	.....	.....	.....	.....
Dusky Diamond No. 2, ..	Slope, ....	.....	.....	.....	.....	.....	.....	.....	.....

\* title  
flooding; no air measurements taken.

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	Name of General Superintendent	Post Office	Name of Superintendent	Post Office	Railroad to Mine
G. B. Markle Co. Jeddo No. 4 and Ebervale. Highland No. 5. Highland No. 2.	Luzerne, .....	A. B. Jessup, General Manager.	Jeddo, .....	.....	.....	Lehigh Valley
Lehigh Valley Coal Co. Hazleton No. 1. Hazleton Shaft. Spring Mountain and Spring Brook. Spring Brook Washery.	Luzerne, .....	Thomas Mining Superintendent.	Wilkes-Barre, .....	W. H. Davies, .....	Hazleton, .....	Lehigh Valley
Coke Brothers and Co., Inc. Driftton. Doringer, Gowen and Tom- bicken. Eckley and Buck Mountain. Eckley Washery.	Luzerne, .....	Thomas Mining Superintendent.	Wilkes-Barre, .....	W. H. Davies, .....	Hazleton, .....	Lehigh Valley
Pardee Brothers and Co. Lattimer, .....	Luzerne, .....	G. W. Barager, General Manager.	Lattimer Mines, .....	.....	.....	Lehigh Valley
A. Pardee and Co. Cranberry, .....	Luzerne, .....	Frank Pardee, .....	Hazleton, .....	.....	.....	Lehigh Valley
C. M. Dodson and Co. Beaver Brook, .....	Luzerne, .....	John J. Turnbach, .....	Beaver Brook, .....	.....	.....	L. V. and C. R. R. of N. J.
Harwood Coal Co. Harwood, .....	Luzerne, .....	A. W. Drake, General Manager.	Hazleton, .....	.....	.....	Lehigh Valley
Upper Lehigh Coal Co. Upper Lehigh, .....	Luzerne, .....	T. E. Snyder, .....	Hazleton, .....	C. H. Rohland, .....	Upper Lehigh, .....	C. R. R. of N. J.
M. S. Kemmerer and Co. Sandy Run, .....	Luzerne, .....	M. S. Kemmerer, .....	Sandy Run, .....	J. P. Powell, .....	Sandy Run, .....	C. R. R. of N. J.
J. S. Wentz and Co. Hazle Brook, .....	Luzerne, .....	T. E. Snyder, General Manager.	Hazleton, .....	John Evans, .....	Hazle Brook, .....	Lehigh Valley

Hazle Mountain Coal Co.	Luzerne, .....	W. R. McTurk, President.	Philadelphia, Penn- sylvania Building.	Morton H. McTurk, ..	Hazleton, .....	Lehigh Valley
Hazle Mountain, .....	Luzerne, .....	Frank A. Hill, .....	Pottsville, .....	I. D. Thomas, .....	Hazleton, .....	Lehigh Valley
Harleigh Brookwood Coal Co.	Luzerne, .....	A. F. Wolf, General Manager.	Wilkes-Barre, .....	Joseph G. Saricks, ..	Freeland, .....	Lehigh Valley
Harleigh and Pond Creek, ..	Luzerne, .....	Thomas R. Reese, ....	Audenried, .....	.....	.....	C. R. R. of N. J.
Wolf, .....	Luzerne, .....	.....	.....	.....	.....	.....
Wolf Coal Co.	Luzerne, .....	.....	.....	.....	.....	.....
Thomas R. Reese and Son	Luzerne, .....	.....	.....	.....	.....	.....
Dusky Diamond, .....	Luzerne, .....	.....	.....	.....	.....	.....

TABLE 2.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured, quantity of powder, dynamite and permissible explosives used, etc.

Names of Operators and Collieries	County	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employees	Total production of coal in tons	Number of days worked	Number of employees	Number of fatal accidents	Number of non-fatal accidents	Explosives			Number of horses and mules
										Number of pounds of powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used	
G. B. Mackle Co.													
Jello No. 4 and Ebervale, .....	Luzerne.....	307,321	22,462	1,984	229,717	249	791	3	10	49,650	168,605	.....	71
Jello No. 7, .....		254,323	6,960	12,890	274,373	258	292	4	9	2,150	39,614	.....	12
Hightland No. 5, .....		247,413	21,420	841	269,674	247	531	2	1	53,800	160,198	.....	44
Hughland No. 2, .....		196,066	23,694	10,066	235,704	244	430	.....	8	1,300	53,152	.....	47
Totals, .....		1,003,362	80,536	25,670	1,109,468	.....	2,026	9	22	107,100	461,569	.....	174
Lehigh Valley Coal Co.													
Hazleton No. 1, .....	Luzerne, .....	214,100	26,000	61,740	301,900	231	623	1	2	20,950	150,644	.....	42
Hazleton Shaft, .....		244,096	22,582	3,740	340,888	232	913	3	0	40,060	178,897	.....	37
Spring Mountain and Spring Brook, .....		271,036	36,844	4,329	335,369	233	701	3	4	96,050	57,589	.....	55
Spring Brook Washery, .....		23,129	.....	.....	23,129	215	23	.....	.....	.....	.....	.....	.....
Totals, .....		762,021	175,386	69,809	1,007,226	.....	2,310	7	15	167,060	387,130	.....	134
Coxe Brothers and Co., Inc.													
Driftton, .....	Luzerne, .....	271,601	36,116	5,928	313,645	232	594	2	1	92,475	59,348	.....	55
Deringer, Cowen and Tomblicken, .....		232,066	28,013	4,641	265,060	216	477	.....	1	60,725	87,155	.....	59
Bedley and Buck Mountain, .....		193,700	1,252	6,589	201,491	234	280	1	.....	15,478	52,218	.....	44
Bedley Washery, .....		47,424	24,529	570	72,523	227	30	.....	.....	.....	.....	.....	.....
Totals, .....		745,131	89,910	17,678	852,719	.....	1,381	3	2	168,678	198,721	.....	158
Pardee Brothers and Co.													
Lattimer, .....	Luzerne, .....	495,351	64,000	6,115	565,466	250	1,010	5	5	2,125	186,643	.....	80



A. Pardee and Co. Cumberland, .....	450,367	6,240	6,896	521,503	243	1,431	3	4	45,100	307,250	.....	160
C. M. Dodson and Co. Beaver Brook, .....	319,967	31,000	783	351,750	262	748	1	3	89,000	135,375	.....	66
Harwood Coal Co. Harwood, .....	156,372	62,400	1,705	220,477	193	465	.....	3	3,925	48,180	.....	49
Upper Lehigh Coal Co. Upper Lehigh, .....	119,216	15,700	3,190	138,106	222	227	.....	1	4,600	52,706	.....	20
M. S. Kemmerer and Co. Sandy Run, .....	108,503	9,768	2,562	120,833	232	281	.....	3	2,800	17,456	.....	32
J. S. Wentz and Co. Hazel Brook, .....	89,799	22,556	1,005	113,360	170	299	.....	2	31,550	13,150	.....	29
Hazel Mountain Coal Co. Hazel Mountain, .....	86,032	18,952	1,025	107,309	193	325	1	1	7,150	43,223	.....	47
Harleigh Brookwood Coal Co. Harleigh and Pond Creek, .....	64,709	9,505	455	74,669	181	279	.....	2	1,735	17,050	.....	23
Wolf Coal Co. Wolf, .....	37,642	2,109	.....	39,751	32	73	.....	2	.....	20,075	.....	3
Thomas R. Reese and Son Dusky Diamond, .....	1,066	474	4,018	5,558	37	9	.....	.....	776	1,500	.....	2
Grand totals, .....	4,439,438	645,846	140,911	5,226,195	.....	10,904	29	65	631,563	1,880,028	.....	977

TABLE 2.—Part 2

Names of Operators	County	Number of Boilers				Locomotives			Total horse power	Number of steam engines of all classes	Total horse power	Number of pumps delivering water to surface	Capacity in gallons per minute	Quantity delivered to surface per minute—gallons	Number of electric dynamos	Number of air compressors
		Cylindrical	Horse power	Tubular	Horse power	Total horse power	Steam	Air	Electric							
G. B. Markle Co., .....	Luzerne, .....	.....	.....	27	9,300	9,300	16	5	10	95	6,650	11	13,296	13,296	5	7
Lehigh Valley Coal Co., .....	Luzerne and Carbon	.....	.....	58	9,220	9,220	9	.....	14	65	8,725	21	19,560	8,600	5	1
Coxe Brothers and Co., Inc., ..	.....	.....	.....	49	9,375	9,375	18	6	.....	52	4,855	12	14,409	8,150	1	6
Pardoe Brothers and Co., .....	.....	.....	.....	12	4,000	4,000	10	.....	2	17	3,540	8	.....	.....	.....	3
A. Pardoe and Co., .....	.....	.....	660	27	6,000	6,660	19	.....	.....	76	18,550	15	23,100	7,600	.....	1
C. M. Dodson and Co., .....	.....	.....	.....	25	3,600	3,600	.....	.....	.....	18	1,400	9	12,100	5,750	.....	1
Harwood Coal Co., .....	.....	.....	.....	12	1,800	1,800	3	.....	.....	19	890	5	7,000	3,500	.....	1
Upper Lehigh Coal Co., .....	.....	.....	.....	12	2,340	2,460	6	.....	.....	34	1,026	2	1,070	1,050	2	1
M. S. Kennermer and Co., .....	Luzerne, .....	.....	.....	4	480	780	1	.....	.....	8	446	1	750	720	.....	1
J. S. Wentz and Co., .....	.....	.....	.....	9	1,350	1,350	3	.....	.....	24	720	1	6,500	3,000	.....	1
Hazle Mountain Coal Co., .....	.....	.....	.....	9	1,330	1,330	.....	.....	.....	6	650	6	6,300	6,000	.....	1
Harleigh Brookwood Coal Co.,	.....	.....	.....	8	1,000	1,000	1	.....	.....	7	650	6	4,450	2,000	.....	1
Wolf Coal Co., .....	.....	.....	.....	.....	325	325	.....	.....	.....	.....	300	.....	700	.....	.....	.....
Thomas R. Reese and Son, ..	.....	.....	.....	1	125	125	.....	.....	.....	.....	60	.....	.....	.....	.....	.....
Totals, .....	.....	32	1,080	255	50,246	51,325	89	11	26	437	48,462	95	109,176	57,016	13	23

\*Jeddo Tunnel drainage.  
†Drainage into Beaver Brook No. 10.

TABLE 3.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside										Outside										Grand total inside and outside	
		Mine foremen	Assistant mine foremen	Fire bosses and assistants	Miners	Miners' laborers	Drivers and runners	Doorboys and helpers	Pumpmen	Company men	All other employes	Total inside	Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Slatepickers (boys)	Slatepickers (men)	Bookkeepers and clerks	All other employes	Total outside		
G. B. Markle Co., .....	Luzerne, .....	8	11	7	504	462	100	31	19	52	311	1,505	1	6	55	90	67	30	9	293	571	2,046	
Luzerne Valley Coal Co., ....	Luzerne and Carbon	9	14	.....	607	235	57	10	23	278	376	1,539	.....	4	54	86	53	67	13	504	751	2,350	
Coxe Brothers and Co., Inc.	Luzerne, .....	5	14	.....	488	113	84	12	11	41	107	878	.....	1	32	54	15	29	11	377	503	1,381	
Pardoe Brothers and Co., ..		1	11	.....	375	151	31	2	.....	48	43	663	1	1	35	43	32	17	9	206	347	1,010	
A. Pardoe and Co., .....		6	3	5	352	296	62	43	18	55	111	953	1	1	59	68	39	13	3	303	478	1,431	
C. M. Dodson and Co., ...		1	3	1	183	133	36	13	9	40	41	520	1	1	18	32	39	9	4	124	228	1,748	
Harwood Coal Co., .....		1	4	1	122	108	29	.....	6	37	29	328	1	.....	19	12	13	3	5	82	137	465	
Upper Lehigh Coal Co., ...		1	1	.....	26	28	7	.....	2	8	14	87	1	3	10	31	10	1	.....	82	140	227	
M. S. Kemmerer and Co., ...		1	2	.....	65	33	15	3	1	28	32	180	1	1	6	12	17	37	2	25	101	281	
E. S. Rantz and Co., .....		1	2	.....	65	30	14	.....	4	60	.....	176	1	1	9	26	12	2	.....	70	133	299	
Hazle Mountain Coal Co., ..		1	2	.....	102	60	29	4	6	20	.....	215	1	2	12	14	20	8	.....	51	110	325	
Harleigh Brookwood Coal Co., .....		1	3	.....	70	38	12	.....	8	46	.....	178	1	2	8	15	20	10	1	44	101	279	
Wolf Coal Co., .....	1	.....	.....	23	16	.....	.....	2	17	.....	59	1	.....	2	3	.....	.....	.....	7	14	73		
Thomas R. Reese and Son,	1	.....	.....	2	3	.....	.....	.....	.....	.....	6	.....	.....	.....	.....	.....	.....	.....	2	3	9		
Totals, .....	.....	38	72	15	2,984	1,756	458	118	109	723	1,064	7,347	10	33	289	487	298	226	64	2,150	3,557	10,904	



TABLE 4.—Fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 10	Joseph Martuscella, .	American, ..	Engineer, .....	24	S.	..	..	Drifton, .....	..	Instantly killed by falling under mine locomotive on gangway.
25	Lewis Mozioko, .....	Lithuanian, ..	Miner, .....	27	S.	..	8	Hazleton Shaft, ..	..	Instantly killed by blast at face of breast.
Feb. 16	Neal Matz, .....	Italian, .....	Miner, .....	43	M.	1	1	Lattimer, .....	..	Instantly killed by cars on gangway.
24	Fred H. Cuyler, .....	American, ..	Contractor, .....	55	M.	1	1	Drifton, .....	..	Fatally injured by slide of rock on stripping. Outside.
29	Robert Coleman, .....	Greek, .....	Laboret, .....	39	M.	1	4	Spring Mountain, .	..	Instantly killed by shovel dipper on stripping. Outside.
March 1	Peter Schrader, .....	German, ....	Miner, .....	55	M.	1	..	Jeddo No. 7, ....	..	Instantly killed by fall of coal at face of breast.
14	Oscar Schlauch, .....	American, ..	Car-coupler, ....	19	S.	..	..	Cranberry, .....	..	Fatally injured between cars near bottom of slope.
24	John Gross, .....	American, ..	Carpenter, .....	48	M.	1	1	Cranberry, .....	..	Fatally injured by being struck by derrick pole. Outside.
May 29	Mike Gregor, .....	Italian, .....	Miner, .....	24	S.	..	..	Ebervale, .....	..	Instantly killed by explosion of dynamite at face of tunnel.
June 6	John Musko, .....	Slavonian, .	Laborer, .....	21	S.	..	..	Eckley, .....	..	Instantly killed by being struck by flying piece of coal from shot on stripping. Outside.
11	George Morris, .....	Lithuanian, ..	Miner, .....	40	M.	1	3	Spring Mountain, .	..	Instantly killed by fall of coal at face of breast.
July 5	Joseph Payne, .....	Italian, .....	Miner, .....	35	M.	1	4	Hazleton Shaft, ..	..	Fatally injured by fall of slate at face of breast.
9	John Shinsack, .....	Greek, .....	Miner, .....	31	M.	1	2	Beaver Brook, ....	..	Instantly killed by blast at face of breast.
31	Simon Randis, .....	Lithuanian, ..	Miner, .....	25	M.	1	1	Lattimer, .....	..	Instantly killed by being crushed at battery in breast.
Aug. 12	Peter Drobeck, .....	Polish, .....	Laborer, .....	29	M.	1	..	Jeddo No. 4, .....	..	Instantly killed by shock from electric wire on gangway, voltage 885.
17	Peter Schneider, ....	German, ....	Miner, .....	51	M.	1	2	Lattimer, .....	..	Suffocated by rush of culm from bank in stripping. Outside.
19	Leo Gentless, .....	Italian, .....	Shaker-tender, ..	18	S.	..	..	Jeddo No. 7, .....	..	Fatally injured by being whirled around shaft on breaker. Outside.
28	Adam Miller, .....	American, ..	Stable-boss, ....	41	M.	1	5	Hazleton No. 1, ..	..	Instantly killed by cars on slope.
Sept. 12	Mike Bakus, .....	Hungarian, ..	Laborer, .....	30	M.	1	1	Highland No. 5, .	..	Instantly killed by fall of coal from pillar which they were robbing in breast.



TABLE 4—Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Sept. 13	Joseph Breacoi, .....	Italian, .....	Switch-boy, .. ..	17	S.	..	..	Jeddo No. 7, ..	Luzerne, .....	Instantly killed by stripping locomotive, outside.
16	John Spilock, .....	Polish, .....	Patcher, .....	19	S.	..	..	Ebervale, .....		Fatally injured by falling under cars on gangway.
24	Frank Yetcoufski, ..	Polish, .....	Miner, .....	52	M.	1	2	Cranberry, .....		Instantly killed by fall of slate at face of robbing.
Oct. 9	Tomoy Olsichen, .....	Italian, .....	Jackman, .....	37	M.	1	2	Jeddo No. 7, ..		Instantly killed by fall of clay on stripping, outside.
21	James Donardo, .....	Italian, .....	Laborer, .....	22	S.	..	..	Lattimer, .....		Instantly killed, head was caught between buggy door and roof of breast.
Nov. 8	Theo. Beattie, .....	Italian, .....	Miner, .....	30	M.	1	1	Hazleton Shaft, ..		Instantly killed by fall of coal from pillar which he was robbing.
18	Paul Glott, .....	Austrian, ..	Miner, .....	38	M.	1	3	Hazle Mountain, ..		Fatally injured by fall of slate on gangway.
Dec. 18	George Zello, .....	American, ..	Machine tender, ..	18	S.	..	..	Spring Mountain, ..		Fatally injured by being whirled around shaft on breaker, outside.
20	John Bonzas, .....	Russian, ....	Miner, .....	48	M.	1	4	Highland No. 5, ..		Instantly killed by blast. He cut the match of squib and shot went off before he left face of breast.
23	Angello Roman, ....	Italian, .....	Miner, .....	41	M.	1	4	Lattimer, .....		Fatally injured by being run over by man-car at top of slope, outside.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan.	3 Mike Danko, .....	Hungarian,	Miner, .....	37	M.	Ebervale, .....	Luzerne, .....	Leg fractured by fall of slate at face of robbing.
4	William Baker, .....	American, ..	Carpenter, .....	23	S.	Drifton, .....		Collar bone fractured by car dropping on him in shop. Outside.
5	Joseph Hannas, .....	Hungarian,	Miner, .....	42	M.	Tomblicken, .....		Ribs fractured by falling down breast man-way.
6	Thomas Kessel, .....	American, ..	Diamond driller, .....	42	M.	Hazleton Shaft, ..		Fingers crushed between ram and pipe while driving pipe in hole.
10	John Lobonopski, ....	Lithuanian,	Miner, .....	26	M.	Hazleton Shaft, ..		Hand shattered by blast at face. He drilled out missed shot.
20	Charles Kasabot, .....	Slavonian, ..	Patcher, .....	21	S.	Sandy Run, .....		Leg fractured by being caught between derailed car and rib of gangway.
22	John Halico, .....	Slavonian, ..	Driver, .....	21	M.	Sandy Run, .....		Leg fractured by being entangled in trace chains on gangway.
22	Steve Mollick, .....	Polish, .....	Miner, .....	29	M.	Hazleton No. 1, ..		Leg fractured by fall of coal in cross-cut.
24	John Corra, .....	Tyrolean, ...	Miner, .....	42	M.	Wolf, .....		Arm fractured by flying material from car that ran away down slope.
26	Andrew Novak, .....	Polish, .....	Miner, .....	38	M.	Highland No. 2, ..		Eyes injured by explosion of powder at face while ramming it into hole.
27	Steve Donanski, ....	Polish, .....	Miner, .....	24	S.	Harwood, .....		Arm fractured by fall of coal from pillar at face of robbing.
Feb.	5 Anthony Wisofskie, ..	Lithuanian,	Laborer, .....	43	M.	Highland No. 2, ..		Fingers crushed by cars. He was running alongside of cars and fell. Outside.
7	Nazro Dalesandro, ..	Italian, .....	Laborer, .....	55	M.	Lattimer, .....		Leg crushed by empty car passing over it. Outside.
12	Mark Campbell, .....	American, ..	Patcher, .....	22	S.	Highland No. 2, ..		Clavicle dislocated. He was on front end of mine locomotive and ran through unopened door.
15	Gordon Rowland, ....	American, ..	Patcher, .....	25	S.	Spring Mountain, ..		Head and face lacerated by being struck on head by cars. Outside.
20	Bernard Warner, ....	American, ..	Miner, .....	49	S.	Harwood, .....		Legs fractured by fall of slate in gang-way.
26	Mike Hudock, .....	Hungarian,	Miner, .....	40	M.	Spring Mountain, ..		Skull fractured by fall of slate at face of breast.

TABLE 5—Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Feb. 27	John Dinnaas, .....	Lithuanian, ..	Miner, .....	28	M.	Harleigh, .....		Internally injured by being squeezed between donkey and car in gangway.
March 6	Andrew Victor, .....	Polish, .....	Miner, .....	45	M.	Hazleton No. 1, ..		Hands shattered by explosion of powder while drilling out hole that had misfired.
	William Watkins, ..	American, ..	Patcher, .....	37	M.	Hazleton Shaft, ..		Leg fractured between bumpers of empty car. Outside.
	Simon Zucofski, .....	Polish, .....	Miner, .....	48	M.	Harwood, .....		Leg fractured by being struck by bar at face of robbing. A piece of coal struck the bar and threw it against his leg.
	Joseph Laroek, .....	Italian, .....	Miner, .....	52	M.	Hazleton Shaft, ..		Face and hands burned by explosion of gas at face of breast.
	Mike Juterell, .....	Italian, .....	Miner, .....	29	S.			Indured by slide of coal on stripping. Outside.
	Fleming Romo, .....	Spanish, .....	Laborer, .....	40	M.	Hazleton Shaft, ..		Ribs fractured by being caught between slope collar and car.
	Frank Covel, .....	Spanish, .....	Laborer, .....	40	M.			Leg fractured by falling under truck. Outside.
	Edward Jenkins, ....	American, ..	Laborer, .....	36	M.	Sandy Run, .....	Luzerne, ....	Foot crushed by being caught under wheel of derailed truck. Outside.
May 24	Albert Smith, .....	American, ..	Laborer, .....	16	S.	Pond Creek, .....		Leg fractured between locomotive and car on gangway.
May 29	Gustav Morzkus, .....	German, .....	Laborer, .....	49	M.	Upper Lehigh, ....		Collar bone fractured between car and timber on gangway.
June 1	Mike Steve, .....	Greek, .....	Patcher, .....	19	S.	Highland No. 2, ..		Leg fractured by slide of coal in battery.
July 2	Mike Zebach, .....	Slavonian, ..	Driver, .....	34	M.	Ebervale, .....		Face lacerated by flying coal from blast in breast.
July 9	John Moses, .....	American, ..	Miner, .....	48	M.	Ebervale, .....		Leg fractured by fall of coal at face of breast.
	Mike Jurishin, .....	Greek, .....	Miner, .....	47	M.	Beaver Brook, ....		Scalp lacerated and body injured by fall of slate at face of breast.
Aug. 10	Pischo Omfer, .....	Polish, .....	Laborer, .....	33	S.	Jeddo No. 4, ....		Leg crushed between cars on rock bank. Outside.
Aug. 17	Lewis Skeeba, .....	Hungarian, ..	Miner, .....	29	M.	Spring Brook, ..		
	Alfonzo Forte, .....	Italian, .....	Laborer, .....	56	M.	Jeddo No. 7, ....		

Aug.	19	George Kokenda, .....	Slavonian, .....	Miner, .....	40	M.	Hazle Brook, .....	Face and hands burned by explosion of gas at face of breast.
		John Pubak, .....	Slavonian, .....	Repairman, .....	32	M.	Lattimer, .....	Small bone in foot fractured between bumping block and wheel at bottom of slope.
	20	Mike Sivori, .....	Hungarian, .....	Miner, .....	30	M.	Jeddo No. 4, .....	Face and hands burned by explosion of gas in face of breast.
	30	Alexander Yorick, ..	Slavonian, .....	Driver, .....	20	S.	Hazle Brook, .....	Body squeezed between car and prop on gangway.
Sept.	3	Harry Grestock, .....	Greek, .....	Laborer, .....	25	S.	Cranberry, .....	Head and hand lacerated by fall of slate at face of breast.
		Stanley Lobach, .....	Polish, .....	Miner, .....	31	M.	Lattimer, .....	Scalp lacerated by fall of coal in gangway.
	19	John Sishlock, .....	American, ..	Topman, .....	26	S.	Spring Mountain, ..	Body squeezed between cars on turnout on top of inside slope.
	21	Thomas Morris, ..	American, ..	Miner, .....	37	M.	{ Jeddo No. 4, ....	Slight of one eye destroyed by explosion of dynamite in hole at face of breast.
		John Wisda, .....	Slavonian, ..	Miner, .....	25	M.	{ Highland No. 2, ..	Face lacerated.
	26	Michael Wilson, .....	American, ..	Patcher, .....	18	S.	{ Highland No. 2, ..	Leg fractured between timber truck and empty cars. Outside.
Oct.	3	Andrew Welsko, ..	Slavonian, ..	Patcher, .....	20	S.	{ Highland No. 2, ..	Legs fractured by flying material from truck that ran away down slope without rope.
		James Moore, .....	American, ..	Motor engineer, .....	22	S.	{ Highland No. 2, ..	Nose lacerated, mouth badly torn and front teeth destroyed.
	8	Andrew Komaniis, ..	Hungarian, ..	Miner, .....	22	M.	Hazle Mountain, ..	Leg fractured by fall of slate at face of breast.
	15	Joseph Bartonavage, ..	Polish, .....	Miner, .....	30	S.	Highland No. 2, ..	Spine fractured by fall of coal in gangway.
	18	Gustave Hause, ....	German, ....	Miner, .....	48	M.	Cranberry, .....	Legs fractured by fall of coal in gangway.
	21	Lewis Beegel, .....	Polish, .....	Miner, .....	30	M.	Cranberry, .....	Leg fractured by fall of coal in breast.
	22	Andrew Potushan, ..	Greek, .....	Patcher, .....	18	S.	Ebervale, .....	Body squeezed between car and timber on gangway.
	24	Adam Chesneski, ....	Polish, .....	Laborer, .....	40	S.	Cranberry, .....	Leg fractured by blast at face of breast.
Nov.	4	Nick Veneroso, .....	Italian, .....	Foreman, .....	35	M.	Jeddo No. 7, ....	He used short fuse.
	6	Irvin Kovatchick, ..	Slavonian, ..	Laborer, .....	28	M.	Beaver Brook, ....	Leg crushed by machinery in breaker. Outside.
	12	James Basilla, .....	Italian, .....	Miner, .....	36	M.	Beaver Brook, ....	Hip dislocated by fall of coal at face of robbing.
	18	Lawrence Felme, ....	Austrian, ...	Miner, .....	38	M.	Wolf, .....	Spine injured by fall of slate at face of breast.
	22	Peter Menick, .....	Slavonian, ..	Miner, .....	28	M.	Hazleton Shaft, ..	Arm fractured by fall of slate at face of gangway.
	30	John Hreso, .....	Hungarian, ..	Fireman, .....	40	M.	Lattimer, .....	Leg fractured and ankle dislocated by fall of slate at face of breast.
Dec.	5	Casimer Kocuskie, ..	Polish, .....	Miner, .....	37	M.	{ Ebervale, .....	Face and hands scalded by hot vapor in ash pit of boiler house. Outside.
	13	Frank Pishak, .....	Polish, .....	Miner, .....	34	M.	{ Highland No. 5, ..	Face and hands burned by explosion of gas in chute.
	17	John Cherba, .....	Hungarian, ..	Patcher, .....	39	M.	{ Highland No. 5, ..	Eyes injured by explosion of box of percussion caps on gangway.
					17	S.	{ Highland No. 5, ..	Arm badly crushed under wheels of cars on gangway.

TABLE 5—Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Dec. 18	Thomas Anderson, ...	American, ...	Patcher, .....	17	S.	Lattimer, .....	{ Luzerne, .... }	Leg fractured by being caught between car and cribbing at breaker. Seriously injured by fall of slate at face of breast.
31	Andrew Kassick, ....	Polish, .....	Miner, .....	44	M.	Hazleton Shaft, .		



## CONDITION OF COLLIERIES

## G. B. MARKLE COMPANY

Jeddo No. 4 and Ebervale Collieries.—Ventilation, roads, drainage and condition as to safety, good.

Jeddo No. 7 Colliery.—Nos. 1 and 3 Slopes: Ventilation, roads, drainage and condition as to safety, good.

Highland Nos. 2 and 5 Collieries.—Ventilation, roads, drainage and condition as to safety, good.

## LEHIGH VALLEY COAL COMPANY

Hazleton No. 1, Hazleton Shaft, Spring Mountain and Spring Brook Collieries.—Ventilation, roads, drainage and condition as to safety, good.

## COXE BROTHERS AND COMPANY, INCORPORATED

Drifton, Deringer, Gowen, Tomhicken, Eckley and Buck Mountain Collieries.—Ventilation, roads, drainage and condition as to safety, good.

## PARDEE BROTHERS AND COMPANY

Lattimer Colliery.—Ventilation, roads, drainage and condition as to safety, good.

## A. PARDEE AND COMPANY

Cranberry Colliery.—Ventilation good. Roads and drainage fair. Condition as to safety, good.

## C. M. DODSON AND COMPANY

Beaver Brook Colliery.—Ventilation good. Roads and drainage fair. Condition as to safety, good.

## HARWOOD COAL COMPANY

Harwood Colliery.—Ventilation, roads and drainage fair. Condition as to safety, good.

## UPPER LEHIGH COAL COMPANY

Upper Lehigh Colliery.—Ventilation, roads, drainage and condition as to safety, good.

## M. S. KEMMERER AND COMPANY

Sandy Run Colliery.—Ventilation, roads, drainage and condition as to safety, good.

## J. S. WENTZ AND COMPANY

Hazle Brook Colliery.—Ventilation, roads and drainage fair. Condition as to safety good.

## HAZLE MOUNTAIN COAL COMPANY

Hazle Mountain Colliery.—Ventilation, roads, drainage and condition as to safety, good.

## HARLEIGH BROOKWOOD COAL COMPANY

Harleigh Colliery.—Buck Mountain Slope.—Ventilation, roads, drainage and condition as to safety, good.

Spear Point, Primrose and Wharton Slopes.—Ventilation, roads and drainage, fair. Condition as to safety, good.

Fish Tail Slope.—Ventilation fair. Roads, drainage and condition as to safety, good.

Pond Creek Colliery.—Nos. 7 and 8 Slopes.—Ventilation fair. Roads, drainage and condition as to safety, good.

## WOLF COAL COMPANY

Wolf Colliery.—Ventilation, roads and drainage fair; condition as to safety, good.

## THOMAS R. REESE AND SON

Dusky Diamond Colliery.—Ventilation, roads, drainage and condition as to safety, good.

## IMPROVEMENTS

## G. B. MARKLE COMPANY

Jeddo No. 4 Colliery.—Compound cylinders placed on 16 by 24 inch hoisting engine.

One 18-ton steam locomotive installed outside.

Remodeling of breaker partly completed. Old jigs replaced by new type.

Extended flushing pipe line in Mammoth vein 800 feet, and continued flushing breasts with crushed breaker refuse.

Four thousand one hundred thirty-one feet of gangway driven in No. 4 slope, and 3,038 feet driven in shaft.

A concrete mule stable for 34 mules and two fireproof hospitals were built inside; also two fireproof foreman's offices and tool houses. The above inside offices and stables were equipped with electric lights.

Six sets of steel timber were set on No. 4 turnout. Built 1 concrete overcast, 16 brick stoppings, and 5 concrete door-frames, connecting ventilating system to new air shaft and fan.

Ebervale Colliery.—Ebervale Slope: A concrete mule stable in solid rock, with capacity for 24 mules, was completed.

Three hundred and six feet of new gangway driven and 1,329 feet of old gangway reopened during the year.

One 7-ton electric locomotive was added to the equipment inside.

Jeddo No. 7 Colliery.—Breaker equipped with pipe lines and fire protection system completed.

A new mule barn was constructed to take the place of the one burned during the year.

The head house in the breaker was remodeled, and new shakers and picking tables installed.

A new miner's wash-house, with shower baths and lockers, was built at No. 3 slope.

One thousand two hundred forty-seven feet of gangways driven and 819 feet reopened during the year.

Two fireproof inside hospitals were constructed.

New tunnel was driven to the Wharton vein.

The great stripping on the Mammoth vein was continued with 7 steam shovels, 25 locomotives and 2 refuse hoisting planes.

Highland No. 5 Colliery.—One 18-ton steam locomotive was installed outside and 50 new mine cars were added to the rolling stock.

New rolls, shakers and jigs were added to breaker equipment. A rock tunnel 387 feet long was driven through the Buck Mountain underlap.

Rock tunnels were driven to the Gamma vein and in the new slopes.

A manway was driven to the surface for the new slopes.

The mine fan for the Pink Ash section was moved to a new concrete cribbed air shaft, west of No. 4 breaker.

Seven thousand five hundred ninety-six feet of gangway driven in No. 5 mines and 3,298 in the new slopes.

Fireproof tool shanties, foremen's offices, inside hospitals and mule stables were constructed of concrete.

A 14 by 18 inch double hoisting engine and a pump were erected at Slope C.

Highland No. 2 Colliery.—1,500 feet of rock tunnel driven for haulage and drainage connection between Nos. 1 and 2 mines and the central pumping plant.

A 6-inch wood pipe line for flushing breaker refuse into old workings was laid from the breaker to rock filled breasts in the mines.

Flushing breasts with ashes was continued at No. 1 slope and rock filling of old breasts at No. 2.

Fireproof mule stables were built at Nos. 1 and 2 slopes.

An 18 by 10 by 20 inch pump was installed in Slope D.

A concrete hospital was built at the foot of No. 2 slope and No. 1 slope.

Highland No. 6 Slope.—One steam locomotive was converted into an oil burning type for this mine.

The south canal was regraded, and a water diversion embankment constructed across the basin to protect robbing area.

A new manway was brought to the surface near the main slope.

Three thousand two hundred ninety-seven feet of gangway driven.

A brick hospital was constructed near foot of slope.

A Cameron No. 6 steam pump was installed.

General improvements.—New houses for employes were built at West Oakdale and Jeddo, and general repairs and improvements at the various villages kept up.

Training on first aid and mine rescue work was given to corps of employes by the United States Bureau of Mines through a visit of its mine safety car.

#### LEHIGH VALLEY COAL COMPANY

Hazleton No. 1 Colliery.—Outside: A motor generator set, housed in a brick building, was installed. Rebuilt hoisting engine house at Feger Ridge was rebuilt.

Inside.—A slope 285 feet long was sunk in the Buck Mountain vein from the 7th level, and an electric hoist installed.

Electric haulage was installed on the 3rd and 7th levels, replacing an oil burning locomotive and a number of mules.

The wood timber at the foot of No. 8 slope was replaced by steel.

Removed 221,759 cubic yards of cover from No. 6 stripping, making a total of 752,277 cubic yards up to January, 1913.

Hazleton Shaft Colliery.—Outside: The steam driven electric generator, supplying power for inside haulage, was replaced by a motor generator set using electric current supplied by Harwood Electric Company.

Electric motors were installed to replace steam engines to drive the following fans: No. 5 slope, Primrose and Stockton No. 2.

Electric engines were installed to replace steam engines on No. 5 Tender slope and Stockton No. 2 hoists.

The fresh water steam pump located at Stockton No. 2 was replaced by an electric pump.

Constructed a silt settling basin and conveyor west of the shaft engine house.

A Welch automatic engine stop was installed on the water hoist engine.

In the breaker 4 spirals were installed on broken coal and 4 on egg coal; also 1 Norman picker for broken coal and 1 for egg coal.

The removing of the cover in No. 5 stripping was completed, 60,329 cubic yards having been removed, making a total of 672,931 cubic yards.

Inside.—A rock tunnel 60 feet long was driven from East Buck Mountain vein 2nd level, to Gamma vein.

Tunnel No. 23 from No. 3 slope was continued from Tracy vein to Orchard vein in No. 5 slope.

Stockton.—A motor generator set was installed in a tile building at No. 7 slope.

Electricity having been installed, the boiler plant at No. 2 slope was discontinued.

Electric haulage was installed to replace the oil burning locomotive.

A tunnel 570 feet long was driven from the Wharton to the Primrose vein.

Spring Mountain Colliery.—Outside: The wood engine house at Tender slope was torn down and replaced by one made of tile.

An addition was built to the boundary slope engine house to accommodate a motor generator set.

The fan engine at the boiler house was replaced by a larger one.

The Brown Draft Regulating System was installed in the boiler house.



An American wire fence was placed about the colliery.

An electric hoist was installed at Primrose slope and a tile engine house built.

Four Norman pickers were installed in breaker.

One hundred and forty-five thousand one hundred thirty-seven cubic yards of cover were removed from the stripping, making a total of 569,205 cubic yards up to January 1, 1913.

Inside.—Electric haulage was installed, replacing one oil burning locomotive and one steam burning locomotive.

A rock tunnel 95 feet long was driven from Buck Mountain vein to Lykens vein in the boundary slope section.

Spring Brook Colliery.—A hoisting engine was installed on the Lykens Trial slope.

#### COXE BROTHERS AND COMPANY, INCORPORATED

Drifton Colliery.—Outside: A settling tank and silt conveyor built near the breaker.

Stripping operations were commenced on the northwestern part of the property.

Built new tile office and warehouse.

The No. 1 slope engine was moved farther south and placed on a concrete foundation, and a tile engine house was built.

From the Lattimer stripping 43,427 cubic yards were removed, making a total of 3,101,065 cubic yards up to January 1, 1913.

Inside.—A rock tunnel 39 feet long was driven from the Top to Bottom Split of the Buck Mountain vein, near the foot of the underground slope.

Deringer Colliery.—Inside: A rock plane was driven to the stripping.

All wood was replaced by cement in the No. 2 pump house, No. 5 pump house, No. 4 pump house and No. 5 engine house.

From the stripping 69,590 cubic yards were removed, making a total of 383,139 cubic yards up to January 1, 1913.

Eckley Colliery.—Outside: Two Norman pickers were installed in breaker, one on pea coal and the other on buckwheat.

A rock tunnel is being driven across the anticlinal in No. 6 slope.

From the Buck Mountain slope No. 1 basin stripping 291,427 cubic yards of cover were removed, making a total of 2,346,620 cubic yards to January 1, 1913.

From the Buck Mountain slope No. 6 stripping, 116,315 cubic yards of cover were removed, making a total of 989,314 cubic yards to January 1, 1913.

The Buck Mountain No. 11 stripping was started and 133,360 cubic yards of cover removed to January 1, 1913.

#### PARDEE BROTHERS AND COMPANY

Lattimer Colliery.—A triple expansion duplex Jeanesville steam pump for furnishing breaker water was installed in a rock pump house, No. 12 level. This pump will raise water to the surface or directly on the breaker, as desired.

A tunnel 7 by 11 feet was driven from the first split of the Alpha vein No. 9 level, north, a distance of 265 feet, which cut the second



split of the Alpha vein, in which an airway is being driven up to connect with the East gangway slope No. 22; also a tunnel 7 by 11 feet was driven south from the Gamma to the Buck Mountain vein in slope No. 8, a distance of 50 feet, and gangways opened east and west.

An air shaft was sunk from the surface to the face of breast No. 14 on the West gangway in the upper split of the Alpha vein, Slope No. 22. An air shaft was sunk from the surface to the face of breast No. 47 on the West gangway in the second split of the Alpha vein, Slope No. 22. An air shaft was sunk from the surface to the face of breast No. 68 on the East gangway in the second split of the Alpha vein, Slope No. 22.

Whitcomb gasoline motor was installed on the second lift, Slope No. 22.

A new flume 480 feet in length and  $5\frac{1}{2}$  feet by 10 feet inside was built along the eastern line of the property.

Two one-story steel barns, each 38 by 90 feet, have been erected with concrete floors, concrete partitions and steel mangers, to replace the wooden mule barns destroyed early in the year.

No. 4 breaker has been extensively repaired during the year. Replaced at least 70 per cent. of the hemlock timbers supporting the breaker and run-of-mine conveyor with long leaf yellow pine.

A new 18-ton Thew steam shovel, replacing an old Kingsford shovel, and a new 20-ton Porter locomotive replacing an old 12-ton Clark one, have been added to the outside equipment.

Milnesville.—An 8-inch artesian well was sunk to a depth of 402 feet near the south line of Milnesville.

Milnesville shaft was sunk about 120 feet during the year and is now completed to the second lift, from which point a tunnel is being driven north to the Mammoth vein.

The South tunnel from the shaft elevation 1,440 was extended 350 feet across the south basin to the Buck Mountain vein on the south side of the basin.

A rock hole was driven from the Buck Mountain vein south tunnel at the shaft to the Gamma vein, Slope No. 26, a distance of 54 feet.

A rock hole was driven from the counter chute from the stripping near the west end to the basin of the Holmes vein, a distance of 25 feet.

A tunnel 7 by 9 feet was driven north from the West Gamma gangway Slope No. 26, to the Mammoth vein stripping, a distance of 25 feet.

At Hollywood a rock hole was driven from the Mammoth to the basin of the Primrose vein, a distance of 48 feet.

#### A. PARDEE AND COMPANY

Cranberry Colliery.—All inside pump houses, stables, smithshops and hospitals have been made fireproof, by the substitution of concrete and steel for wood.

No. 6 slope was extended 150 feet to the Gamma vein, and No. 8 slope 175 feet to the Buck Mountain vein.

A rescue station, equipped with Draeger mine rescue apparatus has been established on the surface and a corps of trained men organized for rescue and first aid.

## C. M. DODSON AND COMPANY

Beaver Brook Colliery.—A new slope, 300 feet long, was sunk to the Wharton Bed in No. 11.

In No. 11 slope a tunnel 40 feet long was driven from the North dip, Buck Mountain, to the North dip, Lykens.

In No. 11 slope a tunnel 90 feet long was driven from the South dip, Lykens, to the South dip, Buck Mountain.

A canal 2,700 feet long was built north of the No. 11 basin.

A terra cotta slush line 1,200 feet long was built.

A triplex electric fresh water pump was installed.

Five thousand two hundred feet of 6-inch water line was installed.

All tenant houses were repaired and repainted.

A new engineer's office, with fireproof vault, was erected.

An 18-ton steam locomotive was installed for outside haulage.

## M. S. KEMMERER AND COMPANY

Sandy Run Colliery.—A flume 600 feet in length was built, lined with terra cotta, to carry silt into the old workings of No. 1 slope to strengthen pillars.

One 500-horse power Maxim boiler was installed, and 2,300 feet of 4-inch steam line placed from this boiler to No. 5 slope, doing away with the old steam plant at No. 5 slope.

New medical room built in slopes Nos. 2 and 5, and the pump house at bottom of No. 2 slope was made fireproof.

## HARLEIGH BROOKWOOD COAL COMPANY

Harleigh Colliery.—Spear Point: Moved channel or Big Black Creek 100 feet south of old location.

Relocated 100-horse power hoist and erected new engine house 20 by 30 feet.

Erected transformer house 12 by 18 feet and office 14 by 20 feet.

Rearranged surface tracks and extended turnouts.

Fish Tail.—Drove new slope from surface to basin a distance of 280 feet, on 38 degree incline, south.

Erected engine house 20 by 28 feet, and installed one 75-horse power electric hoist and three 30 KVA transformers.

Sunk air shaft 8 by 8 feet, and constructed 1,800 feet of 3 foot gauge track.

Drove rock tunnel from Buck Mountain bed to Gamma bed, a distance of 100 feet.

Relocated stripping plane at eastern end of stripping, erected engine house 14 by 24 feet, and installed one 100 horse power electric hoist.

Constructed 700 feet of standard gauge track to handle run-of-mine coal from Pond Creek, and extended standard gauge loaded stand track 300 feet.

Breaker.—Installed one 12 by 48 inch conveyor to convey coal from ground to top of breaker, a distance of 300 feet, and erected the necessary buildings in connection therewith. Rearranged 3 foot surface tracks to conform to above.

Constructed 700 feet standard gauge track to handle run-of-mine coal for Pond Creek.

Extended standard gauge loaded car stand track 300 feet.

Changed breaker drive from 16 by 30 inch to double 14 by 24 inch engine.

Pond Creek Colliery.—This colliery had been abandoned four years and had become inundated. Property was unwatered by pumping 125,000,000 gallons and slopes Nos. 7 and 8 were reopened to basin.

In No. 7 slope all gangways were reopened and retimbered to the face.

In No. 8 slope about 3,000 feet of gangways reopened, track laid and put in condition for transporting coal.

Installed two 100-horse power electrically driven centrifugal pumps, capacity, 1,000 gallons per minute against total head of 225 feet.

Installed two 50-horse power electric hoists and erected two engine houses for same.

Erected combination tippie and separator for reloading coal from mine car to railroad cars.

Erected 15 by 24 foot fireproof sub-station and installed three 75 KVA step-down transformers.

Reopened old "K" bore hole from Buck Mountain bed to Lykens Valley bed and constructed syphon to convey water to lower bed.

Sunk air shaft 8 by 8 feet on south outcrop of Buck Mountain bed.

Erected wash house 10 by 14 feet at No. 8.

Constructed 2,500 feet of 3-foot gauge outside tracks.

## TWELFTH DISTRICT

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SCHUYLKILL COUNTY

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Mahanoy City, Pa., February 28, 1913.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor of transmitting herewith my Annual Report as Inspector of Mines for the Twelfth Anthracite District, for the year ending December 31, 1912, as required by the Act of April 14, 1903.

Respectfully submitted,

P. C. FENTON, Inspector.

## SUMMARY OF STATISTICS

Number of collieries, .....	9
Number of mines, .....	20
Number of mines in operation, .....	19
Number of tons of coal shipped to market, .....	2,385,885
Number of tons used at mines for steam and heat, .....	358,691
Number of tons sold to local trade and used by employes, .....	50,477
Number of tons produced, .....	2,795,053
Number of tons produced by compressed air machines, .....	.....
Number of tons produced by electrical machines, .....	.....
Number of persons employed inside of mines, .....	5,127
Number of persons employed outside, .....	2,108
Number of fatal accidents inside of mines, .....	30
Number of fatal accidents outside, .....	7
Number of non-fatal accidents inside of mines, .....	24
Number of non-fatal accidents outside, .....	3
Number of tons of coal produced per fatal accident inside, .....	93,168
Number of tons produced per fatal accident outside,....	399,293
Number of tons produced per fatal accident inside and outside, .....	75,542
Number of persons employed per fatal accident inside,..	171
Number of persons employed per fatal accident outside,..	301
Number of persons employed per fatal accident inside and outside, .....	196
Number of persons employed per non-fatal accident inside, .....	213
Number of persons employed per non-fatal accident out- side, .....	703
Number of persons employed per non-fatal accident inside and outside, .....	268
Number of wives made widows, .....	14
Number of children made orphans, .....	41
Number of steam locomotives used inside of mines, .....	.....
Number of steam locomotives used outside, .....	18
Number of compressed air locomotives used inside, .....	15
Number of compressed air locomotives used outside, .....	.....
Number of electric motors used inside, .....	14
Number of electric motors used outside, .....	.....
Number of fans in use, .....	19
Number of furnaces in use, .....	.....
Number of gaseous mines in operation, .....	19
Number of non-gaseous mines in operation, .....	.....
Number of new mines opened, .....	3
Number of old mines abandoned, .....	.....



TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Philadelphia and Reading Coal and Iron Company, ....	2,466,614
Lehigh Valley Coal Company, .....	328,439
Total, .....	<u>2,795,053</u>

Production by Counties

Schuylkill, .....	<u>2,795,053</u>
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TABLE B.—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Number of employees inside	Number of employees outside	Total number of employees	Number of employees inside per fatal accident	Number of employees outside per fatal accident	Number of employees inside per non-fatal accident	Number of employees outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total								
Philadelphia and Reading Coal and Iron Co.	26	4	30	18	3	21	94,870	4,415	1,794	6,209	170	449	245	.....
Lehigh Valley Coal Co., .....	4	3	7	6	3	9	82,110	712	314	1,026	173	105	119	105
Totals and averages for district, .....	30	7	37	24	3	27	116,461	5,127	2,108	7,235	171	351	213	703

TABLE C.—Classification of Fatal Accidents Inside and Outside of Mines

	Months												Percentages	
	January	February	March	April	May	June	July	August	September	October	November	December		Totals
Causes of Accidents Inside														
Falls of coal, .....		2	2			1		2	3	2			11	36.66
Falls of roof, .....		2								1		1	5	16.66
Mine cars, .....								2			1		3	10.00
Explosions of gas, ..			1					2					3	10.00
Explosions of powder and dynamite, .....									1				1	3.34
Blasts, premature and otherwise, .....		1	1									1	3	10.00
Falling into slopes, etc., .....		1											1	3.34
Crushed at batteries, ..			1						1				2	6.66
Caught by cage, .....											1		1	3.34
Totals, .....		6	5			1		6	5	3	2	2	30	100.00
Causes of Accidents Outside														
Cars, .....	1		1					1			1	1	5	71.42
Electricity, .....										1			1	14.29
By falling trough, ....											1		1	14.29
Totals, .....	1		1					1		1	2	1	7	100.00
Grand totals inside and outside, .....	1	6	6			1		7	5	4	4	3	37	

TABLE D.—Classification of Non-Fatal Accidents Inside and Outside of Mines

	Months												Percentages	
	Totals	December	November	October	September	August	July	June	May	April	March	February		January
Causes of Accidents Inside														
Falls of coal, .....	7	1	1	1	1	1	.....	.....	.....	.....	1	1	1	29.17
Mine cars, .....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	4.17
Explosions of gas, ..	7	2	.....	.....	1	.....	.....	.....	.....	2	.....	.....	.....	29.17
Explosions of powder and dynamite, .....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	1	.....	16.66
Blasts, premature and otherwise, .....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	8.33
Caught by rush of coal, .....	2	1	.....	.....	.....	1	.....	.....	1	.....	.....	.....	.....	8.33
Struck by timber, ....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	4.17
Totals, .....	24	2	4	1	2	1	1	1	1	.....	3	6	2	100.00
Causes of Accidents Outside														
Fell off mule, .....	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	33.33
Struck by timber, ...	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	33.33
Caught by rush of coal, .....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	33.34
Totals, .....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	100.00
Grand totals inside and outside, .....	27	2	4	1	2	1	1	1	1	.....	4	7	3	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Assistant mine foremen, ..		1	4	...	...	...	...	3	4	2	...	1	1
Miners, .....		5	...	...	...	1	...	...	...	...	...	...	20
Miners' laborers, .....		...	1	...	...	...	...	2	...	...	...	...	3
Drivers and runners, .....		...	1	...	...	...	...	1	...	1	1	1	4
Repairmen, .....		...	...	...	...	...	...	...	...	1	...	...	1
Starters, .....		...	...	...	...	...	...	...	1	...	...	...	1
Totals, .....		6	5	...	...	1	...	6	5	3	2	2	30
Outside													
Engineers and firemen, .....		...	...	...	...	...	...	...	...	...	1	...	1
Car runners, .....		1	...	...	...	...	...	...	...	...	...	...	1
Plane tenders, .....		...	...	...	...	...	...	...	...	1	...	...	1
Repairmen, .....		...	...	...	...	...	...	...	...	1	...	...	1
Loaders, .....		...	1	...	...	...	...	...	...	...	...	...	1
Hoppermen, .....		...	...	...	...	...	...	1	...	...	...	...	1
Spraggers, .....		...	...	...	...	...	...	...	...	...	...	1	1
Totals, .....		1	1	...	...	...	...	1	...	1	2	1	7
Grand totals inside and outside, .....	1	6	6	...	...	1	...	7	5	4	4	3	37

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Miners, .....	1	5	2	...	...	...	1	1	2	1	2	1	16
Miners' laborers, .....	...	1	...	...	1	...	...	...	...	...	1	1	4
Loader bosses, .....	...	...	...	...	...	...	...	...	...	...	1	...	1
Loaders, .....	1	...	1	...	...	...	...	...	...	...	...	...	2
Switchmen, .....	...	...	...	...	...	1	...	...	...	...	...	...	1
Totals, .....	2	6	3	...	1	1	1	1	2	1	4	2	24
Outside													
Slatepickers (boys), .....	1	...	...	...	...	...	...	...	...	...	...	...	1
Miners, .....	...	...	1	...	...	...	...	...	...	...	...	...	1
Laborers, .....	...	1	...	...	...	...	...	...	...	...	...	...	1
Totals, .....	1	1	1	...	...	...	...	...	...	...	...	...	3
Grand totals inside and outside, .....	3	7	4	...	1	1	1	1	2	1	4	2	27

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	Totals
American, .....	...	1	...	...	...	...	...	1	...	1	1	4
English, .....	...	...	...	...	...	...	...	...	...	...	...	1
Irish, .....	...	...	...	...	...	...	...	...	...	...	...	1
German, .....	...	...	...	...	...	...	...	...	...	...	1	1
Polish, .....	...	2	3	...	...	...	...	...	1	...	...	7
Italian, .....	1	...	...	...	...	...	...	1	...	...	...	2
Lithuanian, .....	...	3	3	...	...	1	...	3	4	3	...	17
Austrian, .....	...	...	...	...	...	...	...	1	...	...	...	1
Russian, .....	...	...	...	...	...	...	...	...	...	...	...	1
Greek, .....	...	...	...	...	...	...	...	...	...	1	...	2
Totals, .....	1	6	6	...	...	1	...	7	5	4	4	37

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	Totals
American, .....	...	...	1	...	...	1	1	...	...	...	1	4
German, .....	1	...	...	...	...	...	...	...	...	...	1	2
Polish, .....	1	2	1	...	...	...	...	...	...	...	3	7
Slavonian, .....	1	4	...	...	...	...	...	...	...	...	...	1
Lithuanian, .....	...	...	3	...	1	...	...	1	2	1	...	12
Russian, .....	...	1	...	...	...	...	...	...	...	...	...	1
Totals, .....	3	7	4	...	1	1	1	1	2	1	4	27



TABLE I.—Operators and mines, kind of openings, type and size of fans, size of furnaces, volume of air produced by fan or furnace per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	Kind of opening	Gaseous or non-gaseous	Method of ventilation	Diameter of fan in feet and inches	Width of blades in feet and inches	Depth of blades in feet and inches	Number of revolutions per minute	Water gauge developed—in inches	Name of fan	Power used	Area of furnace bars in square feet	Number of splits of air currents	Number of cubic feet of air per minute entering the mine at inlet	Total number of cubic feet of air per minute circulating in all the splits	Number of cubic feet of air per minute passing out at outlet	Number of persons employed inside
Philadelphia and Reading Coal and Iron Co.																
Ellangowan Colliery:																
Ellangowan, .....	Slope, .....	Gaseous, ..	{ Fan, ...	20	6.6	6.0	80	1.4	{ Guibal, ...	Steam, ....	..	10	72,992	42,000	73,874	180
Ellangowan, .....	Shaft, ..		{ Fan, ...	15	7.0	6.6	72	.5			..	7	74,538	30,000	75,125	134
Ellangowan, .....	Slope, ..		{ Fan, ...	15	7.0	6.6	76	.6			..	10	71,002	50,300	72,400	250
St. Nicholas Colliery:																
St. Nicholas, .....	Slope, ....	Gaseous, ..	Fan, ...	21	7.0	6.6	90	2.3	Guibal, ..	Steam, .....	..	9	41,480	25,000	41,750	113
Suffolk Colliery:																
Suffolk, .....	Slope, ....	Gaseous, ..	Fan, ...	18	6.6	5.6	60	1.1	{ Guibal, ..	Steam, .....	..	5	36,163	19,894	36,659	74
Suffolk, .....	Slope, ....	Gaseous, ..	Fan, ...	18	6.6	5.6	69	1.2			..	2	14,968	7,894	15,113	25
Maple Hill Colliery:																
Maple Hill, .....	Shaft, ....	Gaseous, ..	{ Fan, ...	21	7.0	6.6	75	1.7	{ Guibal, ..	Steam, ....	..	10	71,470	50,000	80,000	240
Maple Hill, .....				21	7.0	6.6	75	1.8			..	9	88,400	78,000	99,500	343
Maple Hill, .....				21	7.0	6.6	78	1.2			..	9	93,390	81,400	97,200	366
Maple Hill, .....				21	7.0	6.6	78	1.8			..	10	55,000	41,000	56,250	174
Tunnel Ridge Colliery:																
Tunnel Ridge, .....	Slope, .....	Gaseous, ..	Fan, ...	21	7.0	6.3	80	2.0	Guibal, ..	Steam, .....	..	10	108,114	62,500	110,781	555
Mahenoy City Colliery:																
Mahenoy City, .....	Slope, .....	Gaseous, ..	Fan, ...	21	7.0	6.6	86	2.0	{ Guibal, ..	Steam, .....	..	10	70,335	30,400	72,600	104
Mahenoy City, .....	Slope, .....	Gaseous, ..	Fan, ...	12	4.4	4.3	80	.8			..	2	18,000	6,000	23,000	16



TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	Name of General Superintendent	Post Office	Name of Superintendent	Post Office	Railroad to Mine
Philadelphia and Reading Coal and Iron Co.						
Ellangowan, .....	{ Schuylkill,					
St. Nicholas, .....						
Suffolk, .....						
Maple Hill, .....						
Tunnel Ridge, .....						
Mahanoy City, .....	{ Schuylkill,	W. J. Richards, .....	Pottsville, .....	Reese Tasker, .....	Pottsville, .....	P. and R.
North Mahanoy, .....						
Lehigh Valley Coal Co.						
Park No. 2, .....		Thomas Thomas, ....	Wilkes-Barre, .....	W. Underwood, .....	Mahanoy City, .....	Lehigh Valley
Prunose, .....						

TABLE 2.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured, quantity of powder, dynamite and permissible explosives used, etc.

Names of Operators and Collieries	County	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employees	Number of fatal accidents	Number of non-fatal accidents	Explosives			Number of horses and mules
										Number of pounds of powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used	
Philadelphia and Reading Coal and Iron Co.													
Ellangowan		316,780	38,220	1,963	356,963	249	1,144	3		231,375	58,147	.....	68
St. Nicholas		173,421	35,657	713	319,791	249	789	3		63,200	50,519	17,156	44
Suffolk		289,669	21,382	1,826	312,727	248	782	3		36,435	63,662	.....	67
Marple Hill	Schuylkill	646,656	50,776	16	696,581	238	1,553	13		383,000	99,180	3,300	68
Tunnel Ridge		136,620	57,776	.....	194,396	243	624	3		28,325	48,035	11,712	53
Mahanoy City		209,808	37,276	33,225	274,314	243	633	3		123,575	46,040	4	52
North Mahanoy		365,983	41,363	3,617	415,963	248	949	3	1	137,100	61,426	.....	80
Totals		2,139,147	280,239	46,923	2,466,614	.....	6,209	30	18	1,063,000	433,659	32,172	432
Lehigh Valley Coal Co.													
Park No. 2	Schuylkill	172,210	67,028	2,319	241,557	224	782	5	6	153,800	58,463	50	109
Primrose		74,228	11,424	1,200	86,852	172	244	2	3	26,900	9,386	.....	34
Totals		246,438	78,452	3,549	328,439	.....	1,026	7	9	180,700	68,059	50	143
Grand totals		2,385,585	358,691	50,477	2,795,053	.....	7,235	37	27	1,213,700	501,718	32,222	575

TABLE 2—Part 2

Names of Operators	County	Number of Boilers		Locomotives		Total horse power	Number of steam engines of all classes	Total horse power	Number of pumps delivering water to surface	Capacity in gallons per minute	Quantity delivered to surface per minute—gallons	Number of electric dynamos	Number of air compressors
		Cylindrical	Horse power	Steam	Air	Electric							
Philadelphia and Reading Coal and Iron Co., .....	{ Schuylkill, ... }	.....	15,000	12	15	9	237	24,369	21	44,222	9,125	2	13
Lehigh Valley Coal Co., .....		.....	6,550	6	.....	5	84	11,688	8	12,500	6,000	1	2
Totals, .....		.....	21,550	18	15	14	319	46,057	29	56,722	15,125	3	15



TABLE 3.—Number of each class of employees inside and outside of mines

Names of Operators	County	Inside		Outside		Grand total inside and outside	
		Total inside	4,415	Total outside	1,794		6,209
		All other employees	915	All other employees	1,031		1,026
		Company men	809	Bookkeepers and clerks	40		
		Pumpmen	16	Slatepickers (men)	87		
		Doorboys and helpers	72	Slatepickers (boys)	7		
		Drivers and runners	273	Engineers and firemen	330		
		Miners' laborers	856	Blacksmiths and carpenters	225		
		Miners	1,399	Foremen	65		
		Fire bosses and assistants	10	Superintendents	17		
		Assistant mine foremen	67		3		
		Mine foremen	8		1		
			11		19		
			332		82		
			1,012		288		
			1,666		330		
			10		43		
			73		2108		
			11		7,235		
			1,012		2,108		
			1,666		1,251		
			10		43		
			73		2108		
			11		7,235		
			332		82		
			1,012		288		
			1,666		330		
			10		43		
			73		2108		
			11		7,235		
			332		82		
			1,012		288		
			1,666		330		
			10		43		
			73		2108		
			11		7,235		
			332		82		
			1,012		288		
			1,666		330		
			10		43		
			73		2108		
			11		7,235		
			332		82		
			1,012		288		
			1,666		330		
			10		43		
			73		2108		
			11		7,235		
			332		82		
			1,012		288		
			1,666		330		
			10		43		
			73		2108		
			11		7,235		
			332		82		
			1,012		288		
			1,666		330		
			10		43		
			73		2108		
			11		7,235		
			332		82		
			1,012		288		
			1,666		330		
			10		43		
			73		2108		
			11		7,235		
			332		82		
			1,012		288		
			1,666		330		
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			1,012		288		
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			1,012		288		
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			11		7,235		
			332		82		
			1,012		288		
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			1,012		288		
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			332		82		
			1,012		288		
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			11		7,235		
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			1,012		288		
			1,666		330		
			10		43		
			73		2108		
			11		7,235		
			332		82		
			1,012		288		
			1,666		330		
			10		43		
			73		2108		
			11		7,235		
			332		82		
			1,012		288		
			1,666		330		
			10		43		
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			10		43		
			73		2108		
			11		7,235		
			332		82		
			1,012		288		
			1,666		330		
			10		43		
			73		2108		
			11		7,235		
			332		82		
			1,012		288		
			1,666		330		
			10		43		
			73		2108		
			11		7,235		
			332		82		
			1,012		288		
			1,666		330		
			10		43		
			73		2108		
			11		7,235		
			332		82		

TABLE 3. —Part 2

Names of Operators	County	Average Number of Days Worked in Breaker												
		January	February	March	April	May	June	July	August	September	October	November	December	Total
Philadelphia and Reading Coal and Iron Co., .....	{ Schuylkill, .....	26	24	26	.....	4	24	24	.....	23	25	23	24	246
		24	23	24	.....	4	25	26	.....	24	27	23	23	243
Lehigh Valley Coal Co., .....														

TABLE 4.—Fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 12	Mike Ruse, .....	Italian, .....	Car runner, ..	19	S.	....	....	Park No. 2, ....	Schuylkill,	Fatally injured between cars. Died next day. (Outside.)
Feb. 2	Joseph Ulson, .....	Lithuanian, ..	Miner, .....	39	S.	....	....	Maple Hill, ....		Fatally injured by a fall of coal at face of breast. Died same day.
3	Martin Chescavage, ..	Lithuanian, ..	Miner, .....	26	S.	....	....	Ellangowan, ....		Fatally injured by fall of rock at face of breast. Died same day.
6	Thomas Davis, .....	American, ..	As't. foreman, ..	48	M.	1	3	Primrose, .....		Killed by fall of rock on gangway.
22	Adam Zubrusky, ....	Polish, ....	Miner, .....	44	M.	1	1	St. Nicholas, ...		Killed by premature blast at face of breast.
24	Frank Carnatovich, ..	Polish, .....	Miner, .....	26	M.	1	1	Maple Hill, ....		Fatally injured by fall of coal at face of breast. Died, Feb. 16.
29	John Dobdsky, .....	Lithuanian, ..	Miner, .....	38	M.	1	1	Tunnel Ridge, ..		Killed by falling down manway. Caused by explosion of powder.
March 6	Felix Solusky, .....	Polish, .....	Laborer, .....	38	M.	1	4	Maple Hill, ....		Killed by rush of coal at battery.
13	Andrew Catusha, .....	Polish, .....	Loader, .....	22	S.	....	....	Maple Hill, ....		Killed by falling under cars. (Outside).
14	Peter Kerechunis, ....	Lithuanian, ..	Miner, .....	48	M.	1	5	Mahanoy City, ..		Killed by explosion of gas in abandoned breast.
18	Joseph Nowak, .....	Polish, .....	Miner, .....	25	S.	....	....	Maple Hill, ....	Schuylkill,	Killed by fall of coal at face of breast.
21	Joseph Borax, .....	Lithuanian, ..	Miner, .....	30	S.	....	....	North Mahanoy, ..		Killed by premature blast at face of breast.
26	Charles Gerfovich, ..	Lithuanian, ..	Miner, .....	40	M.	1	1	Maple Hill, ....		Killed by fall of coal at face of breast.
June 24	Martin Dinnawicz, ..	Lithuanian, ..	Miner, .....	23	S.	....	....	Suffolk, .....		Killed by fall of rock at face of skip.
Aug. 1	William Geravage, ..	Lithuanian, ..	Laborer, .....	26	S.	....	....	Park No. 2, ....		Fatally injured by fall of coal at face of breast. Died Sept. 18.
7	William Covauski, ...	Lithuanian, ..	Miner, .....	39	S.	....	....	Ellangowan, ....		Fatally injured by explosion of gas in abandoned workings. Died next day.
	Stiney Gorbauvage, ..	Lithuanian, ..	Miner, .....	28	S.	....	....	Ellangowan, ....		Fatally injured by explosion of gas in abandoned workings. Died August 28.
9	Harry Molodus, .....	Russian, ....	Driver, .....	25	S.	....	....	Park No. 2, ....		Killed by falling under trip of cars on gangway.
14	William Scott, .....	American, ..	Miner, .....	24	S.	....	....	Maple Hill, ....		Killed by trip of cars on gangway.
20	George Wasser, .....	Austrian, ..	Hopperman, ..	41	M.	1	1	Primrose, .....		Fatally injured by trip of cars. Died August 22. (Outside).
29	Peter Gerbaskte, ....	Italian, .....	Laborer, .....	21	S.	....	....	North Mahanoy, ..	Schuylkill,	Killed by fall of coal at face of skip.
Sept. 3	Andrew Putcanovige, ..	Polish, .....	Miner, .....	23	S.	....	....	Suffolk, .....		Killed by rush of coal at battery.

TABLE 4—Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Sept. 7	Joseph Wasko, .....	Lithuanian, ..	Miner, .....	36	M.	1	1	Maple Hill, .....		Fatally injured by fall of coal in heading. Died October 11.
19	William Geralitus, ...	Lithuanian, ..	Miner, .....	48	M.	1	5	Maple Hill, ..		Fatally injured by fall of coal on gangway. Died September 29.
26	Martin Kindrick, ....	Lithuanian, ..	Miner, .....	29	S.	...	...	Tunnel Ridge, ..		Killed by fall of coal in airway.
30	George Diggish, .....	Lithuanian, ..	Starter, .....	52	M.	1	4	Park No. 2, ...		Fatally injured by explosion of powder in mine. Died October 13.
Oct. 2	John Maholavige, ....	Greek, .....	Repairman, ..	17	S.	...	...	Maple Hill, .....		Killed by coming in contact with electric wires by falling 2200 feet outside.
21	Mike Kubilis, .....	Lithuanian, ..	Miner, .....	40	M.	1	5	Maple Hill, .....		Killed by fall of coal at face of gangway.
26	Harry Wheat, .....	American, ..	Driver, .....	18	S.	...	...	Tunnel Ridge, ..		Killed by fall of rock on bottom of slope.
30	Mike Yanchumis, ....	Lithuanian, ..	Miner, .....	37	S.	...	...	Maple Hill, .....	Schuylkill,	Fatally injured by fall of coal in heading. Died November 1.
Nov. 5	Gus Miller, .....	German, .....	Repairman, ..	39	M.	1	4	Mahanoy City, ..		Fatally injured by trip of cars at head of underground shaft. Died November 7.
6	William Beckett, ....	English, ....	Car runner, ..	22	S.	...	...	Mahanoy City, ..		Fatally injured by being caught between legs and bottom of underground shaft. Died November 14.
7	Alex. Marshall, .....	American, ..	Planetender, ..	20	S.	...	...	Park No. 2, ....		Killed by falling under trip of cars. (Outside.)
22	Patrick Mooney, .....	Irish, .....	Fireman, .....	44	M.	1	5	North Mahanoy, ..		Fatally injured by trough that fell in boiler house. Died November 25. (Outside.)
Dec. 9	Charles Shamus, .....	Lithuanian, ..	Miner, .....	22	S.	...	...	St. Nicholas, ...		Killed by premature blast at face of breast.
11	Andrew Shubite, .....	Greek, .....	Driver, .....	19	S.	...	...	Maple Hill, .....		Killed by fall of rock at face of gangway.
18	Patrick Coralsky, ....	Polish, .....	Spragger, .....	19	S.	...	...	St. Nicholas, ...		Killed by trip of cars at head of breaker. (Outside.)

TABLE 5.—Non-fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 4	Anthony Lucavige, ...	Polish, ....	Loader, ....	47	M.	Park No. 2, ....		Hands injured by explosion of dynamite at battery.
9	John Goodman, ....	German, ....	Miner, ....	39	M.	North Mahanoy, ....		Injured by fall of coal at face of skip.
13	Wassail Hercavage, ..	Slavonian, ...	Slatepicker, ...	17	S.	Park No. 2, ....		Injured by rush of coal in chute under breaker. Outside.
Feb. 7	Martin Ragavige, ....	Lithuanian, ..	Laborer, ....	25	M.	Park No. 2, ....		Injured by fall of coal at face of gangway.
10	Mike Short, .....	Lithuanian, ..	Miner, ....	35	M.	Park No. 2, ....		Injured by explosion of dynamite caps at face of gangway.
16	Jacob Moslowsky, ....	Lithuanian, ..	Miner, ....	31	S.	Mahanoy City, ....		Injured by premature blast at face of gangway.
23	Mike Bondrofsky, ....	Russian, ....	Laborer, ....	20	S.	Park No. 2, ....		Injured by stick of timber falling off breaker. Outside.
	John Shimkus, .....	Lithuanian, ..	Miner, ....	38	M.	Primrose, ....		Injured by premature blast at face of breast.
29	Toney Wassel, .....	Polish, ....	Miner, ....	24	M.	Tunnel Ridge, ....		Injured by explosion of powder in manway.
March 11	George Stankeonis, ....	Polish, ....	Miner, ....	24	M.	Suffolk, ....		Injured by fall of coal on turnout.
14	Saul Wasnopskie, ....	Polish, ....	Miner, ....	34	M.	Mahanoy City, ....		Injured by explosion of gas in abandoned breast.
19	Thomas Tombrew, ....	Lithuanian, ..	Loader, ....	21	S.	Maple Hill, ....	Schuylkill,	Injured by explosion of gas in chute.
27	Thomas Matthews, ....	American, ...	Miner, ....	27	S.	Primrose, ....		Injured by falling off mule. Outside.
May 27	Joseph Shales, .....	Lithuanian, ..	Laborer, ....	28	S.	St. Nicholas, ...		Injured by falling of timber in gangway.
June 18	Harry Shaner, .....	American, ...	Switchman, ...	19	S.	Maple Hill, ....		Injured between locomotive and mine car on gangway.
July 27	Thomas Guster, .....	American, ...	Miner, ....	32	M.	Tunnel Ridge, ...		Injured by rush of coal in chute.
Aug. 19	Stuey Pechilas, ....	Lithuanian, ..	Miner, ....	51	M.	Maple Hill, ....		Injured by fall of coal at face of breast.
Sept. 18	Joseph Bernitskey, ..	Lithuanian, ..	Miner, ....	40	M.	Tunnel Ridge, ...		Injured by explosion of gas at face of breast.
19	Charles Geralitus, ....	Lithuanian, ..	Miner, ....	41	M.	Maple Hill, ....		Injured by fall of coal at face of skip.
Oct. 2	Anthony Palarian, ....	Lithuanian, ..	Miner, ....	25	S.	Maple Hill, ....		Injured by fall of coal at face of breast.
Nov. 2	Toney Bushinskie, ....	Polish, ....	Miner, ....	24	S.	Suffolk, ....		Injured by explosion of gas in chute.
	Matt. Anlavage, .....	Polish, ....	Miner, ....	29	M.	Suffolk, ....		Injured by explosion of gas at face of chute.
15	Samuel Ramsdale, ....	American, ...	Loader boss, ...	26	M.	Primrose, ....		Injured by rush of coal in chute.
23	Frank Solomon, ....	Polish, ....	Laborer, ....	46	S.	Park No. 2, ....		Injured by fall of coal at face of gangway.
Dec. 3	William Kline, .....	German, ....	Laborer, ....	21	M.	St. Nicholas, ...		Injured by explosion of gas in manway.
9	William Baeckals, ....	Lithuanian, ..	Miner, ....	34	S.	St. Nicholas, ...		Injured by explosion of gas in manway.



## CONDITION OF COLLIERIES

## PHILADELPHIA AND READING COAL AND IRON COMPANY

Ellangowau, St. Nicholas, Suffolk, Maple Hill, Tunnel Ridge, Mahanoy City and North Mahanoy Collieries.—Safety conditions, ventilation and drainage, good.

## LEHIGH VALLEY COAL COMPANY

Park No. 2 and Primrose Collieries.—Safety conditions, ventilation and drainage, good.

## IMPROVEMENTS

## PHILADELPHIA AND READING COAL AND IRON COMPANY

Maple Hill Colliery.—The following tunnels were driven: One to Seven Foot vein from No. 1 shaft South tunnel, 45 2-3 yards; tunnel to Seven Foot vein from No. 1 shaft level, 29 yards; tunnel to Seven Foot vein from Bore Hole slope, 1st lift, 26 1-3 yards; haulage tunnel to Skidmore vein from No. 2 shaft, 137 $\frac{1}{3}$  yards; tunnel to Skidmore vein from Bottom split, 36 $\frac{1}{3}$  yards; tunnel to Skidmore vein from Bottom split on No. 6 plane, 19 $\frac{1}{3}$  yards; tunnel to Bottom split vein from No. 7 plane, 17 yards. An electric motor was installed to operate scraper lines outside.

Tunnel Ridge Colliery.—A pump room 20 by 16 feet was driven between Seven Foot and Skidmore veins, 3rd lift, and a 16 by 28 by 14 by 48 inch duplex compound condensing pump, with 10 by 16 by 18 inch condensor, was installed therein.

North Mahanoy Colliery.—An electric hoist was installed to operate Plane, Schuylkill section, 1st lift, No. 3 slope.

Mahanoy City Colliery.—A tunnel was driven to Buck Mountain vein, from shaft level Seven Foot gangway, 68 $\frac{1}{3}$  yards; also a tunnel to Middle Split vein, from water level Top split gangway, 17 $\frac{1}{3}$  yards.

## LEHIGH VALLEY COAL COMPANY

Park No. 2 Colliery.—A concrete and steel mule barn was built on 1st level. A 14 foot Sirocco force fan, with tile and steel building, was erected and put in operation.

A new pump house was made fireproof at foot of slope, and a 23 and 38 by 12 by 36 Jeanesville duplex pump installed therein.

A 16 and 24 by 10 by 36 Goyne pump was installed at Foot of No. 4 slope.

A 14-foot steel plate exhaust fan, with steel housing, was erected and put in operation.

A concrete and tile engine house was built at No. 3 slope and a pair of 22 and 36 by 48 Stroh engines installed therein; concrete and steel mule barns were erected on second and third levels.

Primrose Colliery.—A tunnel was driven from Buck Mountain to Seven Foot vein, 13 $\frac{1}{3}$  yards; also a tunnel from Four Foot to Ten Foot vein, 20 yards.

### MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held at Pottsville, April 1 and 2. The Board of Examiners was composed of P. C. Fenton, Mine Inspector, Mahanoy City; James L. Reese, Superintendent, Park Place; Robert Roberts, Miner; Saint Nicholas; P. H. Devine, Miner, Shaft, P. O.

The following persons passed a satisfactory examination and were granted certificates:

#### MINE FOREMEN

Daniel Drew, Shenandoah; Jacob Rosser, Saint Nicholas.

#### ASSISTANT MINE FOREMEN

Frederick Richards, Samuel Ramsdale, William Jones, Gustav Snyder, Hugh Redclift, James Davis, William H. Dodds, John Salvador, Michael A. Evers, Michael J. Barney, John Holland, Patrick Buckley, John H. James, Thomas Jenkins, Isaac Thomas, Thomas Powell, Mahanoy City; William H. Wonn, Trackville; Robert Lindemuth, William J. Scott, Saint Nicholas; Henry Spor, Hugh Early, William Spears, Shenandoah; Robert T. Jones, William Frost, John Leahy, Ellangowan.



## THIRTEENTH DISTRICT

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SCHUYLKILL COUNTY

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Shenandoah, Pa., March 1, 1913.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: In compliance with the Anthracite Mining Laws, I transmit herewith my Annual Report of the Thirteenth Anthracite District for the year ending December 31, 1912.

Respectfully submitted,

A. B. LAMB, Inspector.

## SUMMARY OF STATISTICS

Number of collieries, .....	14
Number of mines, .....	30
Number of mines in operation, .....	30
Number of tons of coal shipped to market, .....	2,258,958
Number of tons used at mines for steam and heat, .....	310,348
Number of tons sold to local trade and used by employes, .....	73,853
Number of tons produced, .....	2,643,159
Number of tons produced by compressed air machines, ....	.....
Number of tons produced by electrical machines, .....	.....
Number of persons employed inside of mines, .....	4,522
Number of persons employed outside, .....	2,497
Number of fatal accidents inside of mines, .....	12
Number of fatal accidents outside, .....	8
Number of non-fatal accidents inside of mines, .....	16
Number of non-fatal accidents outside, .....	6
Number of tons of coal produced per fatal accident inside, .....	220,263
Number of tons produced per fatal accident outside, ....	330,395
Number of tons produced per fatal accident inside and outside, .....	132,158
Number of persons employed per fatal accident inside, ..	377
Number of persons employed per fatal accident outside, ..	312
Number of persons employed per fatal accident inside and outside, .....	351
Number of persons employed per non-fatal accident inside, ..	283
Number of persons employed per non-fatal accident outside, .....	416
Number of persons employed per non-fatal accident inside and outside, .....	319
Number of wives made widows, .....	14
Number of children made orphans, .....	18
Number of steam locomotives used inside of mines, .....	.....
Number of steam locomotives used outside, .....	32
Number of compressed air locomotives used inside, .....	5
Number of compressed air locomotives used outside, ....	.....
Number of electric motors used inside, .....	5
Number of electric motors used outside, .....	.....
Number of fans in use, .....	30
Number of furnaces in use, .....	.....
Number of gaseous mines in operation, .....	27
Number of non-gaseous mines in operation, .....	3
Number of new mines opened, .....	.....
Number of old mines abandoned, .....	.....



## TABLE A

## PRODUCTION OF COAL

Names of Operators	Tons
--------------------	------

Philadelphia and Reading Coal and Iron Company, ....	1,737,510
Thomas Colliery Company, .....	328,228
Susquehanna Coal Company, .....	277,413
Cambridge Coal Company, .....	69,817
Harleigh Brookwood Coal Company, .....	52,175
Oxford Coal Company, .....	94,099
H. H. Smith and Company, .....	52,157
Brighton Coal Company, .....	31,760
Total, .....	<u>2,643,159</u>

## Production by Counties

Schuylkill, .....	<u>2,643,159</u>
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TABLE B.—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Number of employees inside per fatal accident	Number of employees outside per fatal accident	Number of employees inside per non-fatal accident	Number of employees outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total								
Philadelphia and Reading Coal and Iron Co., .....	9	5	14	9	2	11	193,057	193,057	3,656	1,607	406	321	406	803
Thomas Colliery Co., .....	1	1	2	3	1	4	328,228	109,409	295	225	295	98	225	225
Susquehanna Coal Co., .....	1	1	2	3	2	5	277,413	92,471	368	217	368	50	123	108
Cambridge Coal Co., .....	1	1	2	1	1	2	52,175	52,175	28	50	78	50	175	85
Harleigh Brookwood Coal Co., .....	1	1	2	1	1	2	90	90	169	344	175	85	90	85
Oxford Coal Co., .....	1	1	2	1	1	2	54	54	85	90	90	90	90	90
Brighton Coal Co., .....	1	1	2	1	1	2	54	54	54	54	54	54	54	54
Miscellaneous Companies, .....	1	1	2	1	1	2	54	54	54	54	54	54	54	54
Totals and averages for district, ..	12	8	20	16	6	22	220,263	165,197	4,527	2,497	377	312	283	416

TABLE C.—Classification of Fatal Accidents Inside and Outside of Mines

	Months												Percentages	
	Totals	December	November	October	September	August	July	June	May	April	March	February		January
Causes of Accidents Inside														
Falls of coal, .....	5	1	1	1	1						1			41.67
Falls of slate, .....	1					1								8.33
Mine cars, .....	1											1		8.33
Explosions of gas, ...	1				1									8.33
Falling into slopes, etc., .....	2					1	1							16.67
Rush of coal, .....	1										1			8.34
Fell over piece of coal, .....	1				1									8.33
Totals, .....	12	1	1	1	2	1	2	1			2	1	1	100.00
Causes of Accidents Outside														
Cars, .....	3		1					1				1		37.50
Machinery, .....	2							1			1			25.00
Suffocation in chutes, etc., .....	2							1					1	25.00
Fall of frozen culm, ...	1										1			12.50
Totals, .....	8	1	1					3			1	2	1	100.00
Grand totals inside and outside, .....	20	1	2	1	2	1	2	4			3	2	2	.....

TABLE D.—Classification of Non-Fatal Accidents Inside and Outside of Mines

	Months												Percentages
	Totals	December	November	October	September	August	July	June	May	April	March	February	
Causes of Accidents Inside													
Falls of coal, .....	2	.....	.....	.....	.....	1	.....	1	.....	.....	1	.....	.....
Falls of slate, .....	2	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....	.....
Falls of roof, .....	3	.....	.....	1	1	.....	.....	.....	.....	1	.....	.....	.....
Mine cars, .....	6	1	1	.....	.....	1	1	1	.....	.....	1	.....	.....
Struck by piece of coal, .....	2	.....	.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....
Scalded by steam, ....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Totals, .....	16	1	1	2	2	2	2	2	.....	3	2	1	.....
Causes of Accidents Outside													
Cars, .....	2	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
Machinery, .....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Explosions of dynamite, .....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Struck by lever, ....	1	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
Mules, .....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals, .....	6	1	3	1	1	1	.....	.....	.....	.....	.....	.....	.....
Grand totals inside and outside, .....	.....	2	4	3	2	1	2	2	.....	.....	3	2	1

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Miners, .....			2			1	1			1	1		6
Miners' laborers, .....							1	1	1			1	4
Drivers and runners, .....	1								1				1
Starters, .....									1				1
Totals, .....	1		2			1	2	1	2	1	1	1	12
Outside													
Engineers and firemen, .....		1											1
Laborers, .....	1	1									1		5
Jig runners, .....			1			1							2
Totals, .....	1	2	1			3					1		8
Grand totals inside and outside, .....	2	2	3			4	2	1	2	1	2	1	20

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners, .....		1	2			1	1		1				6
Miners' laborers, .....							1			1			2
Drivers and runners, .....		1	1			1					1	1	4
Pumpmen, .....									1				1
Repairmen, .....	1												1
Starters, .....										1			1
Totals, .....	1	2	3			2	2		2	2	1	1	16
Outside													
Engineers and firemen, .....								1					1
Miners, .....										1			1
Laborers, .....											2	1	3
Timbermen, .....											1		1
Totals, .....								1		1	3	1	6
Grand totals inside and outside, .....	1	2	3			2	2	1	2	3	4	2	22

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
American, .....	...	2	1	...	...	...	1	...	...	...	...	...	4
German, .....	...	...	...	...	...	...	...	...	...	...	1	...	1
Polish, .....	...	...	1	...	...	...	...	...	...	1	1	...	4
Hungarian, .....	...	...	...	...	...	...	1	...	...	...	...	...	1
Italian, .....	1	...	...	...	...	...	...	...	...	...	...	...	1
Lithuanian, .....	1	...	1	...	...	1	...	1	1	...	...	...	5
Austrian, .....	...	...	...	...	...	2	...	...	...	...	...	...	2
Greek, .....	...	...	...	...	...	1	...	...	...	...	...	...	1
Tyrolean, .....	...	...	...	...	...	...	...	...	1	...	...	...	1
Totals, .....	2	2	3	...	...	4	2	1	2	1	2	1	20

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
American, .....	...	1	1	...	...	1	...	1	1	2	2	...	9
English, .....	...	...	...	...	...	...	1	...	...	...	1	...	1
Irish, .....	...	...	...	...	...	...	...	...	...	...	...	...	1
German, .....	1	...	...	...	...	...	...	...	1	...	...	...	4
Polish, .....	...	1	1	...	...	1	...	...	1	...	...	...	4
Hungarian, .....	...	...	...	...	...	...	...	...	...	...	1	1	2
Lithuanian, .....	...	...	1	...	...	...	...	...	...	1	...	1	3
Greek, .....	...	...	...	...	...	...	1	...	...	...	...	...	1
Totals, .....	1	2	3	...	...	2	2	1	2	3	4	2	22





Indian Ridge Colliery:	Shaft, ....	Gaseous, ..	2 Fans, ..	{ 18 15 }	6.0 5.0	4.5 4.75	75 80	1.0 1.1	{ Gulbal, ..	Steam, ....	7	98,069 58,540	51,458 29,940	99,787 59,379	{ 440 }
Indian Ridge Holmes No. 6, .....	Slope, .....	Gaseous, ..	Fan, .....	{ 12 }	.....	3.	45	.3	{ Gulbal, ..	Steam, ....	2	5,130	4,040	5,175	{ 295 }
Indian Ridge Holmes No. 7, .....	Slope, .....	Gaseous, ..	Fan, .....	{ 12 }	.....	.....	.....	.....	{ Gulbal, ..	Steam, ....	4	16,475	12,045	16,610	{ 368 }
Kickerbocker Colliery:	Slope, .....	Gaseous, ..	Fan, .....	18	.....	.....	94	1.3	{ Gulbal, ..	Steam, .....	9	61,698	58,270	62,180	{ 28 }
Kickerbocker No. 1, .....	Slope, .....	Gaseous, ..	Fan, .....	12	.....	.....	.....	.....	{ Gulbal, ..	Steam, .....	10	86,500 33,675	64,900 21,810	87,200 33,890	{ 175 }
Kickerbocker No. 2, .....	Slope, .....	Gaseous, ..	Fan, .....	8	.....	.....	100 150	1.5 1.6	{ Gulbal, ..	Steam, .....	4	14,500	8,850	14,500	{ 368 }
Thomas Colliery Co.	{ Slope, ... }	Gaseous, {	Natural, ..	.....	.....	.....	.....	.....	{ Gulbal, ..	Steam, .....	2	.....	.....	.....	{ 23 }
Kehley Run Colliery:	Shaft, ....	Gaseous, ..	Fan, .....	18	7	9	70	1.8	{ Gulbal, ..	Steam, .....	3	41,200	39,900	67,450	{ 368 }
Kehley Run No. 1, .....	Drift, ....	Gaseous, ..	Fan, .....	18	7	9	75	1.8	{ Gulbal, ..	Steam, .....	4	61,350	58,750	77,100	{ 368 }
Kehley Run No. 2, .....	Drift, ....	Non-gas, ..	Fan, .....	18	7	9	35	.8	{ Vulcan, ..	Steam, .....	2	36,000	40,500	40,500	{ 368 }
Susquehanna Coal Co.	Drift, ....	Non-gas, ..	Natural, ..	.....	.....	.....	.....	.....	{ Gulbal, ..	Steam, .....	2	10,000	8,000	11,000	{ 23 }
William Penn Colliery:	Drift, ....	Non-gas, ..	Natural, ..	.....	.....	.....	.....	.....	{ Gulbal, ..	Steam, .....	1	19,500	.....	20,000	{ 175 }
William Penn No. 1, .....	Drift, ....	Non-gas, ..	Fan, .....	15	4	4.8	50	.8	{ Gulbal, ..	Steam, .....	2	38,500	8,500	40,000	{ 175 }
William Penn No. 2, .....	Drift, ....	Non-gas, ..	Fan, .....	15	4	4.8	85	2.0	{ Gulbal, ..	Steam, .....	1	1,000	.....	8,650	{ 175 }
William Penn No. 3, .....	Drift, ....	Non-gas, ..	Fan, .....	4	.....	.....	250	.2	{ Gulbal, ..	Steam, .....	1	.....	.....	.....	{ 175 }
William Penn No. 4, .....	Drift, ....	Non-gas, ..	Fan, .....	.....	.....	.....	.....	.....	{ Gulbal, ..	Steam, .....	1	19,500	.....	20,000	{ 175 }
Cambridge Coal Co.	Drift, ....	Gaseous, ..	Fan, .....	15	4	4.8	50	.8	{ Gulbal, ..	Steam, .....	1	19,500	.....	20,000	{ 175 }
Cambridge Colliery:	Drift, ....	Gaseous, ..	Fan, .....	15	4	4.8	50	.8	{ Gulbal, ..	Steam, .....	1	19,500	.....	20,000	{ 175 }
Cambridge No. 1, .....	Drift, ....	Gaseous, ..	Fan, .....	15	4	4.8	50	.8	{ Gulbal, ..	Steam, .....	1	19,500	.....	20,000	{ 175 }
Harleigh Brookwood Coal Co.	Drift, ....	Gaseous, ..	Fan, .....	15	4	4.8	50	.8	{ Gulbal, ..	Steam, .....	1	19,500	.....	20,000	{ 175 }
Stanton Colliery:	Drift, ....	Gaseous, ..	Fan, .....	15	4	4.8	50	.8	{ Gulbal, ..	Steam, .....	1	19,500	.....	20,000	{ 175 }
Stanton No. 1, .....	Drift, ....	Gaseous, ..	Fan, .....	15	4	4.8	50	.8	{ Gulbal, ..	Steam, .....	1	19,500	.....	20,000	{ 175 }
Stanton Buck No. 2, .....	Drift, ....	Gaseous, ..	Fan, .....	15	4	4.8	50	.8	{ Gulbal, ..	Steam, .....	1	19,500	.....	20,000	{ 175 }
Stanton Buck No. 3, .....	Drift, ....	Gaseous, ..	Fan, .....	15	4	4.8	50	.8	{ Gulbal, ..	Steam, .....	1	19,500	.....	20,000	{ 175 }
Stanton Buck No. 4, .....	Drift, ....	Gaseous, ..	Fan, .....	15	4	4.8	50	.8	{ Gulbal, ..	Steam, .....	1	19,500	.....	20,000	{ 175 }
William Niswenter Colliery:	Drift, ....	Gaseous, ..	Fan, .....	15	4	4.8	50	.8	{ Gulbal, ..	Steam, .....	1	19,500	.....	20,000	{ 175 }
William Niswenter, .....	Drift, ....	Gaseous, ..	Fan, .....	15	4	4.8	50	.8	{ Gulbal, ..	Steam, .....	1	19,500	.....	20,000	{ 175 }

\*Included with Kehley Run.

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	Name of General Superintendent	Post Office	Name of Superintendent	Post Office	Railroad to Mine
Philadelphia and Reading Coal and Iron Co.						
West Shenandoah, .....						
Kellogg, .....						
Turney Run, .....						
Shenandoah City, .....						
Poston Run, .....	Schuylkill, ..	W. J. Richards, ..	Pottsville, .....	Reese Tasker, .....	Pottsville, .....	P. and R.
Ingert, .....						
Gilberton, .....						
Indian Ridge, .....						
Kritchee Tasker, .....						
Indian Ridge Washery, .....						
Thomas Colliery Co.						
Kelley Run, .....	Schuylkill, ....	Frank A. Hill, .....	Pottsville, .....	John Price, .....	Shenandoah, .....	P. and R.
Susquehanna Coal Co.						
William Penn, .....	Schuylkill, ....	Robert A. Quin, ..	Wilkes-Barre, .....	Edward A. VanHorn, ..	Shaft P. O., .....	Pennsylvania
Cambridge Coal Co.						
Cambridge, .....	Schuylkill, ....	D. R. James, .....	Shenandoah, .....	D. R. James, .....	Shenandoah, .....	P. and R.
Harleigh Brookwood Coal Co.						
Stanton, .....	Schuylkill, ....	Frank A. Hill, .....	Pottsville, .....	John Price, .....	Shenandoah, .....	P. and R.
William Niswenter						
Niswenter, .....	Schuylkill, ....	William Niswenter, ..	Shenandoah, .....	.....	.....	P. and R.
Oxford Coal Co.						
Oxford Washery, .....	Schuylkill, ....	Frank A. Hill, .....	Pottsville, .....	F. L. Klock, .....	Shenandoah, .....	P. and R.
H. H. Smith and Co.						
Hudson Washery, .....	Schuylkill, ....	Henry Meyers, .....	Minersville, .....	Godfrey Landeman, ..	Minersville, .....	P. and R.
Brighton Coal Co.						
Brighton Washery, .....	Schuylkill, ....	.....	.....	J. Arthur Davis, ...	Gilberton, .....	P. and R.

TABLE 2.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured, quantity of powder, dynamite and permissible explosives used, etc.

Names of Operators and Collieries	County	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives			Number of horses and mules
										Number of pounds of powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used	
Philadelphia and Reading Coal and Iron Co.	Schuylkill,	515,711	59,822	7	575,540	245	794	5	2	66,875	40,769	5,929	31
West Shenandoah, .....		155,855	41,922	53,262	254,039	244	250	2	1	26,300	9,394	50	16
Turkey Run, .....		149,726	42,265	.....	191,591	245	684	2	1	72,850	46,223	.....	39
Shenandoah City, .....		153,196	26,086	.....	179,276	252	877	4	2	50,709	33,535	16,665	71
Boston Run, .....		137,766	32,794	.....	175,917	250	597	1	.....	17,750	73,744	.....	17
Draper, .....		157,946	15,419	5,357	173,365	243	658	2	4	19,350	67,807	21,135	46
Gilberton, .....		149,530	8,221	.....	152,751	270	529	.....	.....	74,500	67,680	29,136	46
Indian Ridge, .....		.....	.....	.....	.....	.....	392	.....	.....	12,650	18,540	83,413	56
Knickerbocker, .....		1,422,324	221,529	58,626	1,702,479	.....	5,190	14	11	342,825	390,012	106,328	42
Indian Ridge Washery, .....	Schuylkill, .....	26,994	2,285	5,742	35,031	98	73	.....	.....	.....	.....	.....	364
Totals, .....	.....	1,445,318	223,824	64,368	1,737,510	.....	5,263	14	11	342,825	390,012	106,328	3
Thomas Colliery Co.	Schuylkill,	301,646	21,175	5,407	*28,228	244	520	1	4	88,800	32,044	.....	367
Kehley Run, .....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	42
Sasquehanna Coal Co.		237,672	36,783	2,928	277,413	231	385	1	5	50,875	41,350	.....	64
William Penn, .....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cambridge Coal Co.	Schuylkill, .....	65,201	3,456	1,069	69,817	228	78	1	.....	2,700	2,100	4,800	6

\*Production from Niswenter included with Kehley Run.





TABLE 2.—Part 2

Names of Operators	County	Number of Boilers					Locomotives			Total horse power	Number of steam engines of all classes	Total horse power	Number of pumps delivering water to surface	Capacity in gallons per minute	Quantity delivered to surface per minute—gallons	Number of electric dynamos	Number of air compressors
		Cylindrical	Horse power	Tubular	Horse power	Total horse power	Steam	Air	Electric								
Philadelphia and Reading Coal and Iron Co., .....	Schuylkill,	.....	.....	.....	.....	15,250	14	5	5	15,250	244	30,692	20	31,211	8,323	4	12
Thomas Colliery Co., .....		.....	.....	122	.....	1,950	6	.....	.....	1,950	13	1,213	4	5,000	4,000	.....	1
Susquehanna Coal Co., .....		.....	.....	15	.....	2,300	.....	.....	.....	2,300	20	1,600	1	1,300	849	.....	1
Cambridge Coal Co., .....		.....	.....	4	.....	500	.....	.....	.....	500	7	300	.....	.....	.....	.....	.....
Harleigh Brookwood Coal Co., .....		.....	.....	5	.....	1,750	1	.....	.....	1,750	12	2,750	.....	.....	.....	.....	.....
Oxford Coal Co., .....		.....	.....	4	.....	500	2	.....	.....	500	5	375	2	365	200	.....	1
H. H. Smith and Co., .....		.....	.....	3	.....	375	4	.....	.....	375	6	244	.....	.....	.....	.....	.....
Brighton Coal Co., .....		.....	.....	8	.....	900	3	.....	.....	900	13	623	.....	.....	.....	.....	.....
Totals, .....		.....	23,525	174	23,525	23,525	32	5	5	23,525	321	37,802	27	37,876	13,372	4	15

TABLE 3.—Number of each class of employees inside and outside of mines

Names of Operators	County	Inside										Outside										Grand total inside and outside	
		Mine foremen	Assistant mine foremen	Fire bosses and assistants	Miners	Miners' laborers	Drivers and runners	Doorboys and helpers	Pumpmen	Company men	All other employees	Total inside	Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Slatepickers (boys)	Slatepickers (men)	Bookkeepers and clerks	All other employees	Total outside		
Philadelphia and Reading Coal and Iron Co., ..	Schuylkill.	8	62	....	832	950	209	30	21	798	746	3,616	....	17	65	244	199	84	38	960	1,697	5,263	
Thomas Colliery Co., ..		1	1	4	145	75	11	4	4	50	....	235	....	1	10	26	48	3	4	132	225	5,250	
Susquehanna Coal Co., ..		1	1	6	125	74	40	1	3	11	106	1,068	....	1	32	29	35	2	6	165	217	585	
Cambridge Coal Co., ..		1	1	....	7	15	2	....	....	2	....	28	....	1	3	8	15	3	2	18	50	78	
Harleigh Brookwood Coal Co., ..		1	1	1	67	52	6	....	6	41	....	175	....	3	13	26	14	3	2	108	169	314	
Oxford Coal Co., ..		....	....	....	....	....	....	....	....	....	....	....	....	1	3	12	10	1	1	56	85	85	
H. H. Smith and Co., ..		....	....	....	....	....	....	....	....	....	....	....	....	1	3	8	....	4	1	36	54	54	
Brighton Coal Co., ..		....	....	....	....	....	....	....	....	....	....	....	....	1	5	10	10	3	1	59	90	90	
Totals, .....			12	66	11	1,176	1,166	208	35	34	902	832	4,522	6	26	131	363	331	108	55	1,474	2,497	7,019

TABLE 3.—Part 2

[illegible]

TABLE 4.—Fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 13	Frank Cherill, .....	Italian, .....	Laborer, ..	25	S. ....	...	...	Oxford, .....	Schuykill,	<p>Smothered by rush of culm while picking on a culm bank. Outside.</p> <p>Killed by being squeezed between cars on gangway. He neglected to fix the latches and car ran on wrong track.</p> <p>Killed by being caught by frozen culm. He was shoveling culm to scraper line and was told to keep away from face of the culm bank until the men on top of the bank could break the frozen crust and make it safe. He disobeyed orders and was caught by the fall of frozen culm. Outside.</p> <p>Killed by locomotive jumping track. He and another were making repairs on a steam shovel. They needed some tools so they took an idle locomotive and ran it to the blacksmith shop up a heavy grade. On the return trip the locomotive jumped the track and went over a 30-foot embankment. Outside.</p> <p>Killed by being caught by revolving shaft. He attempted to tighten a bolt without stopping machinery. Outside.</p> <p>Killed by rush of coal. Loose coal broke through rib of chute and caught him near face of robbing.</p> <p>Fatally injured by fall of coal near face. Neck broken by falling into chute. He was trying to pull lump coal into chute when his pick slipped from lump and he fell backward into chute.</p>
20	Peter Jubey, .....	Lithuanian, ..	Driver, ...	18	S. ....	...	...	Gilberton, .....		
Feb. 10	Thomas McAtee, .....	American, ..	Laborer, ..	34	S. ....	...	...	Cambridge, .....		
18	William J. Johnson, ..	American, ..	Fireman, ..	34	M. ....	1	...	Turkey Run, .....		
March 22	William Phillips, ...	American, ..	Jig runner, ..	23	S. ....	...	...	West Shenandoah, ..	Schuykill,	
23	Isadore Scalisofski, ..	Lithuanian, ..	Miner, ...	42	M. ....	1	...	Turkey Run, .....		
27	Andrew Shultz, .....	Polish, .....	Miner, ....	45	M. ....	1	...	Kelley Run, .....		
June 8	Anthony Wazzal, ....	Austrian, ..	Miner, ....	45	M. ....	1	3	Draper, .....		

June	10	Joseph Labosky, .....	Lithuanian,	Jig runner,	18	S.	....	....	West Shenandoah, ..	Killed by being caught by machinery while trying to put a rope on a rope wheel. He dropped a small rope that he was using underneath the wheel, and in attempting to recover it he was caught by machinery. Outside.
	14	Joseph Nastuda, .....	Greek, .....	Laborer, ..	46	M.	1	2	Shenandoah City, ..	Fatally injured by being crushed between mule and car. He was driving a new mule and the mule did not turn out. Outside.
		Frank Molinchock, ...	Austrian, ..	Laborer, ..	21	S.	....	....	Brighton, .....	Smothered by rush of culm. He was working at foot of culm bank when a small amount of the bank suddenly rushed and covered him. Outside.
July	10	Peter Kulfo, .....	Hungarian, ..	Laborer, ..	42	M.	1	1	Stanton, .....	Killed by falling down slope while being hoisted to surface on gunboat.
	18	Mike Monahan, .....	American, ..	Miner, ....	38	M.	1	....	Draper, .....	Killed by fall of slate at face of breast. He was told not to go under a dangerous piece of slate and ordered to blow it down, but he disobeyed orders.
Aug.	1	Anthony Scavage, ....	Lithuanian,	Laborer, ..	28	M.	1	1	Shenandoah City, ..	Fatally injured by falling over a large piece of coal while working at face of gangway.
Sept.	4	Wasol Swarlo, .....	Tyrolean, ..	Starter, ...	36	M.	1	2	Gilberton, .....	Fatally burned by gas on gangway. He was ordered to use a locked safety lamp, but he disobeyed orders and used a naked light.
	28	Frank Tomkiewicz, ....	Lithuanian,	Laborer, ..	24	M.	1	2	William Penn, ....	Killed by fall of coal at face of robbing. Three sets of timber suddenly pushed out and he was caught under fall.
Oct.	18	Peter Halaboda, .....	Polish, .....	Miner, ....	28	M.	1	1	Boston Run, .....	Killed by fall of coal. He fired a shot and returned to face of chute. He neglected to trim down face and was caught by fall.
Nov.	20	Roy Erwin, .....	German, .....	Miner, ....	27	M.	1	2	Shenandoah City, ..	Killed by fall of coal near face.
	30	Mat. Janitsky, .....	Polish, .....	Laborer, ..	68	M.	1	....	West Shenandoah, ..	Fatally injured by falling on rail in front of a moving railroad car. Outside.
Dec.	6	Joe Shaplasky, .....	Polish, .....	Laborer, ..	40	M.	1	4	Shenandoah City, ..	Killed by fall of coal near face of robbing.

Schuykill.



TABLE 5.—Non-fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 3	David Lenhart, .....	German, ....	Repairman, .....	65	M.	Shenandoah City, ....		Hips crushed. While stepping from platform onto side hook of a car standing at chute, the trip started and he was thrown under by being caught by low collar and car on gangway.
Feb. 23	Howard Becker, .....	American, ..	Driver, .....	30	S.	Kelley Run, .....		Arm broken by being caught by low collar and car on gangway.
29	John Winslow, .....	Polish, .....	Miner, .....	25	S.	West Shenandoah, ...		Back and side injured by fall of coal near face.
March 4	Mathew Stine, .....	Lithuanian, ..	Miner, .....	41	M.	Draper, .....		Right leg broken by fall of rock near face.
15	Daniel Brennan, .....	American, ..	Driver, .....	21	S.	Draper, .....		Hip dislocated by being struck by a piece of coal that fell from top of car on gangway.
21	Frank Shansansky, ...	Polish, .....	Miner, .....	25	M.	Turkey Run, .....		Pelvic bone broken by fall of slate near face.
June 12	Charles Lagus, .....	Polish, .....	Miner, .....	36	M.	Kelley Run, .....		Leg fractured by fall of slate away from face.
26	Thomas Mesurty, ....	American, ..	Car runner, ....	16	S.	William Penn, .....		Leg fractured by being caught by cars on gangway. He was sitting too near track.
July 19	Anthony Wanzlilk, ...	Greek, .....	Miner, .....	38	M.	William Penn, .....		Leg fractured by fall of coal near face.
	Daniel Igo, .....	Irish, .....	Laborer, .....	18	S.	Shenandoah City, ....		Leg fractured by falling under car on gangway.
Aug. 29	Patrick Canfield, ....	American, ..	Engineer, .....	24	S.	Oxford, .....	Schuylkill,	Arm broken. He was under locomotive making some repairs when someone started another locomotive and bumped it into the one Canfield was under. Outside.
Sept. 7	Anthony Segursty, ...	Polish, .....	Miner, .....	27	S.	West Shenandoah, ...		Leg broken and face lacerated by fall of rock near face.
23	James Miller, .....	American, ..	Pumpman, .....	62	M.	Stanton, .....		Scalded by steam in pump room. Steam separator burst and put out Miller's light and in the dark he ran into hot steam.
Oct. 10	Paul Randis, .....	Lithuanian, ..	Laborer, .....	24	S.	Draper, .....		Leg fractured by fall of rock near face.
19	Isaac Dettery, .....	American, ..	Miner, .....	24	S.	Kelley Run, .....		Arm, leg and chest lacerated by explosion of dynamite while making up a charge. Outside on strippings.

Oct.	25	Con Haggerty, .....	American, ..	Starter, .....	27	S.	Draper, .....	.....	Ankle broken by being struck by a piece of coal that fell over side of chute.
Nov.	5	George Fox, .....	American, ..	Timberman, ....	38	M.	William Penn, .....	.....	Ribs fractured. While driving a mule and cart the mule suddenly swung around and knocked Fox down. Outside.
	16	Frank Sullivan, .....	Hungarian, ..	Laborer, .....	17	S.	Gilberton, .....	.....	Leg fractured by being struck by lever while helping to place car on track. Outside.
	18	John Baskerfield, ....	English, ...	Driver, .....	40	M.	William Penn, .....	.....	Hand fractured by being caught between car and rib on gangway. His light went out.
	25	Harry Kessler, .....	American, ..	Laborer, .....	26	M.	Gilberton, .....	.....	Leg fractured. The hook on car hoist failed to catch the axle properly and it flew back and struck Kessler. Outside.
Dec.	3	John Folk, .....	Hungarian, ..	Laborer, .....	19	S.	William Penn, .....	.....	Back and pelvis contused by being struck by the dipper of steam shovel. Outside.
	11	Mike Stratscavage, ..	Lithuanian, ..	Driver, .....	25	S.	Kelley Run, .....	.....	Pelvis fractured. He was standing on front bumper of trip and in going around a curve on gangway he was thrown off between car and timber.

Schuykill.

## CONDITION OF COLLIERIES

## PHILADELPHIA AND READING COAL AND IRON COMPANY

West Shenandoah, Kohinoor, Turkey Run, Draper, Gilberton, Boston Run, Shenandoah City and Knickerbocker Collieries.—Ventilation, drainage and condition as to safety, good.

Indian Ridge Colliery.—Ventilation and condition as to safety, good. Drainage, fair.

## THOMAS COLLIERY COMPANY

Kehley Run Colliery.—Ventilation good. Drainage fair and condition as to safety, good.

## SUSQUEHANNA COAL COMPANY

William Penn Colliery.—Ventilation and condition as to safety, good. Drainage, fair.

## HARLEIGH BROOKWOOD COAL COMPANY

Stanton Colliery.—Ventilation, drainage and condition as to safety, good.

## CAMBRIDGE COAL COMPANY

Cambridge Colliery.—Ventilation and condition as to safety, good. Drainage fair.

## IMPROVEMENTS

## PHILADELPHIA AND READING COAL AND IRON COMPANY

Kohinoor Colliery.—Tunnel was driven from Little Buck to Buck Mountain,  $5\frac{1}{2}$  yards long. Steel mine timber was placed in No. 6 slope, 4th lift, East pump room. The inside stable was abandoned and the mules are transported up and down the shaft each day.

Stripping Primrose vein near shaft.

Old stable on surface removed and modern stable erected.

West Shenandoah Colliery.—Erected new stable on 3rd lift in Rock and Little Buck vein. Installed electric hoist for 6th lift and Rock slope 403 feet on 20 degrees. 6-inch water line laid to Kohinoor Colliery to take water from both of Shenandoah Water Companies.

Fourth lift pump room concreted.

Air way is being sunk on Buck Mountain vein to ventilate Rock slope working or new 6th lift.

Shenandoah City Colliery.—Concrete retaining wall was built behind breaker. Tunnel from Seven Foot to Bottom Split, 30 yards long, No. 2 Underground Buck Mountain slope, was completed; total length,  $117\frac{3}{4}$  yards.

Woodwork removed from inside stable and replaced with iron.

New breaker engines are being erected.

Indian Ridge Colliery.—Tunnel driven from Primrose to Little Primrose,  $9\frac{2}{3}$  yards long.

Tunnel driven from Buck Mountain to Little Buck,  $34\frac{2}{3}$  yards long. Concrete lining at Plank Ridge shaft.

No. 6 slope in Holmes vein, shaft basin was completed, total length  $95\frac{2}{3}$  yards; and hoisting engines and ventilating fan erected for same.

No. 7 Slope in Primrose vein was completed, total length  $91\frac{2}{3}$  yards; and hoisting engines and ventilating fan erected for same.

Steel mine timbers were placed in the three inside pump rooms.

Woodwork torn out of inside stable and replaced with iron.

Draper Colliery.—Single and double track tunnel from Buck Mountain vein, 2nd lift, to and around the new coal hoisting shaft, through measures underlying the Buck Mountain vein was completed in February, total length tunnel  $299\frac{1}{3}$  yards, of which 77 yards are double track. This improvement is completed with the exception of installing a 12-inch mechanical pusher to push the empty cars.

Electric haulage installed on 2nd lift.

Gilberton Colliery.—Tunnel on line of Buck Mountain, tender slope, from Buck Mountain to Skidmore vein, 6th lift, was completed in December, total length,  $58\frac{1}{3}$  yards, of which 36 yards are double track. This improvement is completed with the exception of laying the permanent turnout track.

Air tunnel from Seven Foot Monkey 6th lift to Skidmore vein, 30 feet west of 6th lift tunnel, was completed in September; total length,  $13\frac{2}{3}$  yards.

Traffic tunnel to Little Buck vein from Buck Mountain vein just east of tender slope, 6th lift, was completed in October; total length  $14\frac{1}{3}$  yards.

Traffic tunnel to Little Buck vein, from Buck Mountain vein 200 feet west of foot of slope across pitch in Buck Mountain vein, 6th lift, was completed in November; total length,  $13\frac{1}{3}$  yards.

Installed 21-foot exhaust fan on Seven Foot vein just west of supply houses.

Boston Run Colliery.—The gunboat hoisting slope was extended from 3rd to 4th lift; distance,  $94\frac{1}{3}$  yards.

A tunnel to Diamond and Big Tracy veins from West Orchard, 2nd lift, North dip, Plane gangway, near breast No. 24, was completed; total length,  $73\frac{2}{3}$  yards.

A tunnel to Little Buck from East Buck Mountain, 4th lift, near breast No. 4, for locomotive, was completed; total length, 27 yards.

A tunnel to Seven Foot from East Buck Mountain gangway, 4th lift, at breast No. 13, was completed; total length, 20 yards.

#### SUSQUEHANNA COAL COMPANY

William Penn Colliery.—Installed 4-inch fire line in breaker; colliery telephone lines; 6 Wet Side shakers, 2 dump shakers, Lip screen conveyor, Monobar line in breaker, Watchman's time detector system, one pair of 18 by 48 inch Corliss breaker engines. Built breaker engine house and foundations. A 2-bucket aerial tramway for handling boiler ashes is being installed.

Machinery purchased for new colliery machine shop.



Installed exhaust heating system in breaker, and new elevators on west side in breaker.

Purchased material for No. 2 rolls in breaker.

Purchased Organ feed water heater, and arranged for boiler feed water heating system.

Preparatory work at head of proposed Buck slope on No. 4 level. Built new fireproof stables on Nos. 1, 2, 3 and 4 levels.

Rock tunnel driven from West Skidmore to Mammoth vein, 26 $\frac{1}{2}$  yards, and rock tunnel from Skidmore to Seven Foot vein, 17 yards, both in No. 2 drift.

Rock tunnel driven from East Skidmore to Mammoth, 55 $\frac{1}{2}$  yards, and tunnel from East Mammoth to Skidmore, 17 $\frac{1}{2}$  yards, both on No. 1 level. Tunnel driven from Top Split to Mammoth on No. 3 level; and 46 new mine cars, 7 buggies and 3 dumpers installed.

#### HARLEIGH BROOKWOOD COAL COMPANY

Stanton Colliery.—Inside: Installed 2 Jeanesville triple expansion pumps, 48x28x18 by 15 by 36, and one 12 by 18 Cameron pump, with 600 feet of 20-inch column line and an 8-inch steam line.

Tunnel driven from Buck Mountain to Seven Foot vein, with three 4-inch holes to tap the water. New sump, 8 by 10 by 300 feet. New cement waterway 5 by 5 by 156 feet long; 75 feet of gangway steel timbered and concreted. New Buck Mountain slope sunk to depth of 700 feet. Four Foot slope sunk to depth of 300 feet, with air shaft 8 by 8 feet. Retimbered Skidmore slope and air shaft. Installed 16 foot fan with 12 by 18 inch engine. Sunk double slope on Seven Foot vein, Lawrence side, to depth of 130 feet, 75 new mines cars installed.

Outside.—Built addition to breaker and installed 6 B. and K. jigs, 4 Christ jigs, 12 shakers, one 350-horse power breaker engine, and one pump for washing coal, capacity, 1,000 gallons per minute.

Erected brick boiler house, 50 by 130 feet, on Lawrence side, with 5 Sterling water tube boilers of 350 horse power each.

New engine houses and head frames erected on the new Buck Mountain and Four Foot slopes.

Installed 20 by 30, 450-horse power hoisting engines on the New Buck Mountain, Seven Foot and Skidmore slopes.

New conveyor line installed, from Four Foot and Skidmore slopes to cleaner, and from cleaner to breaker.

Installed new cleaner to handle coal from Four Foot, Skidmore and Buck Mountain slopes. 2,400 feet of 10-inch steam line, 1,000 feet of 8-inch steam line, 400 feet of 6-inch steam line. Additions made to blacksmith shop and stable.

#### THOMAS COLLIERY COMPANY

Kehley Run Colliery.—Inside: Completed the concreting of pump house, hospital, stable and gangway adjacent.

Outside.—Installed in breaker elevator and rolls to break steam-boat and broken coal, and 4 Christ jigs. Building for housing and repairing locomotives erected. Fire lines installed throughout the breaker. Extension and dump added to mine coal conveyor line to handle coal from Nos. 3 and 4 slopes and stripping.

Reservoir nearly completed for storing mine water to wash coal in breaker.



## PROSECUTIONS FOR VIOLATIONS OF THE MINE LAWS

On October 12. Prosecution entered against Joseph Hershey and Patrick Connelly for using iron drill in tamping a charge of dynamite.

They both pleaded guilty before the court and were reprimanded by the court and sentenced to pay a fine of \$10 each and the costs of prosecution.

Prosecution entered against Walter Stakolis and William Gubric for using a naked light instead of a locked safety lamp as ordered by the mine foreman. An explosion of gas occurred in the part of the mine in which they worked by which one person was killed and one was burned. Investigation after explosion revealed the fact that Stakolis and Gubric had caused the explosion by using a naked light. This case will be tried at the March term of court.

## MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in Union Hall, Pottsville, April 1 and 2. The Board of Examiners was composed of A. B. Lamb, Mine Inspector; E. A. Van Horn, Superintendent, William Penn; George H. Young, Miner, Shenandoah; George W. Keller, Miner, Ashland.

The following persons passed a satisfactory examination and were granted certificates:

### MINE FOREMEN

Michael J. Maloney, Lost Creek; Edward J. Roberts, Shenandoah.

### ASSISTANT MINE FOREMEN

Robert A. Leddon, Lost Creek; Martin Foyle, William J. Millard, William Reese, Randall Reese, Jacob Dix, Shenandoah; Martin J. Sweeney, John J. Haley, Michael Kearns, Thomas Hanlon, Shaft P. O.; Ellsworth Thomas, Girardville; Wendell Thomas, Harry Morgan, Gilberton; Patrick O'Brian, Yatesville.



## FOURTEENTH DISTRICT

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COLUMBIA, SCHUYLKILL AND NORTHUMBERLAND COUNTIES

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Centralia, Pa., February 15, 1913.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor of transmitting herewith my report as Inspector of Mines for the Fourteenth Anthracite District for the year ending December 31, 1912, as required by the Act of April 14, 1903.

Respectfully submitted,

JAMES A. O'DONNELL, Inspector.

## SUMMARY OF STATISTICS

Number of collieries, .....	16
Number of mines, .....	37
Number of mines in operation, .....	37
Number of tons of coal shipped to market, .....	2,637,824
Number of tons used at mines for steam and heat, .....	397,912
Number of tons sold to local trade and used by employes, .....	48,456
Number of tons produced, .....	3,084,192
Number of tons produced by compressed air machines, ..	.....
Number of tons produced by electrical machines, .....	.....
Number of persons employed inside of mines, .....	4,234
Number of persons employed outside, .....	2,612
Number of fatal accidents inside of mines, .....	18
Number of fatal accidents outside, .....	8
Number of non-fatal accidents inside of mines, .....	42
Number of non-fatal accidents outside, .....	14
Number of tons of coal produced per fatal accident inside, ..	171,344
Number of tons produced per fatal accident outside, ....	385,524
Number of tons produced per fatal accident inside and out- side, .....	118,622
Number of persons employed per fatal accident inside, ..	235
Number of persons employed per fatal accident outside, ..	326
Number of persons employed per fatal accident inside and outside, .....	263
Number of persons employed per non-fatal accident in- side, .....	100
Number of persons employed per non-fatal accident out- side, .....	186
Number of persons employed per non-fatal accident inside and outside, .....	122
Number of wives made widows, .....	16
Number of children made orphans, .....	40
Number of steam locomotives used inside of mines, .....	.....
Number of steam locomotives used outside, .....	46
Number of compressed air locomotives used inside, .....	5
Number of compressed air locomotives used outside, ...	.....
Number of electric motors used inside, .....	26
Number of electric motors used outside, .....	2
Number of fans in use, .....	28
Number of furnaces in use, .....	.....
Number of gaseous mines in operation, .....	32
Number of non-gaseous mines in operation, .....	5
Number of new mines opened, .....	.....
Number of old mines abandoned, .....	.....

TABLE A  
PRODUCTION OF COAL

Names of Operators	Tons
Lehigh Valley Coal Company, .....	1,504,948
Philadelphia and Reading Coal and Iron Company, ....	1,015,552
Midvalley Coal Company, .....	317,177
Girard Mammoth Coal Company, .....	111,766
W. R. McTurk Coal Company, .....	118,659
Harleigh Brookwood Coal Company, .....	10,871
Beaver Valley Coal Company, .....	4,533
Dreshman Coal Company, .....	686
Total, .....	3,084,192

Production by Counties

Schuylkill, .....	1,688,251
Columbia, .....	1,084,399
Northumberland, .....	311,542
Total, .....	3,084,192



TABLE B—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Number of employees inside	Number of employees outside	Total number of employees	Number of employees inside per fatal accident	Number of employees outside per fatal accident	Number of employees inside per non-fatal accident	Number of employees outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total								
Lehigh Valley Coal Co., .....	10	3	13	24	8	32	62,706	2,110	989	3,099	211	329	87	123
Philadelphia and Reading Coal and Iron Co., .....	5	2	7	11	2	13	92,322	1,452	912	2,364	290	456	132	456
Midvalley Coal Co., .....	2	1	3	5	.....	5	63,435	379	208	587	189	208	75	.....
Girard Mammoth Coal Co., .....	1	1	2	1	1	2	111,766	131	233	364	131	233	131	233
W. R. McCurtick Coal Co., .....	.....	.....	.....	1	3	4	118,659	85	218	303	.....	.....	85	72
Beaver Valley Coal Co., .....	.....	1	1	.....	.....	.....	.....	32	39	71	.....	.....	.....	.....
Miscellaneous Companies, .....	.....	.....	.....	.....	.....	.....	.....	45	13	58	.....	.....	.....	.....
Totals and averages for district, .....	18	8	26	42	14	56	73,433	4,234	2,612	6,846	235	326	100	186

TABLE C.—Classification of Fatal Accidents Inside and Outside of Mines

	Months												Percentages
	Totals	December	November	October	September	August	July	June	May	April	March	February	
Causes of Accidents Inside													
Falls of coal, .....	6	...	...	...	1	...	1	...	1	...	2	1	33.33
Falls of slate, .....	2	...	...	...	...	...	1	...	...	...	...	1	11.11
Falls of roof, .....	2	2	...	...	...	...	...	...	...	...	...	...	11.11
Mine cars, .....	2	...	...	...	...	...	1	...	...	1	...	...	11.11
Explosions of gas, ....	1	...	...	1	...	...	...	...	...	...	...	...	5.56
Suffocation by gas, etc. ....	1	...	...	...	...	...	1	...	...	...	...	...	5.56
Struck by flying coal from runaway car, ..	1	...	...	...	1	...	...	...	...	...	...	...	5.56
Falling into shafts, ..	1	...	...	...	...	...	...	...	...	...	...	1	5.56
Crushed at batteries, ..	1	...	...	...	...	...	1	...	...	...	...	...	5.55
Electricity, .....	1	...	...	...	...	...	...	1	...	...	...	...	5.55
Totals, .....	18	2	...	...	2	1	2	3	2	...	3	1	100.00
Causes of Accidents Outside													
Cars, .....	4	1	...	1	...	...	1	...	...	...	1	...	50.00
Suffocation by coal gas, ..	1	...	1	...	...	...	...	...	...	...	...	...	12.50
Struck by frozen culm, ..	1	...	...	...	...	...	...	...	...	...	...	...	12.50
Explosions of powder and dynamite, .....	2	...	...	...	...	...	...	2	...	...	...	...	25.00
Totals, .....	8	1	...	1	...	...	1	...	2	1	1	...	100.00
Grand totals inside and outside, .....	26	3	...	1	...	1	3	3	4	...	4	2	...

TABLE D.—Classification of Non-Fatal Accidents Inside and Outside of Mines

	Months												Percentages	
	January	February	March	April	May	June	July	August	September	October	November	December		Totals
Causes of Accidents Inside														
Falls of coal, .....	.....	2	1	.....	.....	3	2	.....	.....	3	.....	1	12	28.57
Falls of slate, .....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	2.38
Mine cars, .....	.....	1	1	.....	.....	.....	2	.....	2	1	.....	.....	7	16.67
Explosions of gas, ....	4	.....	.....	.....	.....	.....	3	.....	3	.....	.....	1	11	26.19
Explosions of powder and dynamite, .....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	2.38
Blasts, premature and otherwise, .....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	1	.....	3	7.15
Rush of gob, .....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2.38
Crushed at batteries, .	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	4.76
Mules, .....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2.38
Struck by piece of coal, ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1	2.38
Struck by timber, .....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	.....	2	4.76
Totals, .....	6	5	2	.....	1	4	8	1	5	6	2	2	42	100.00
Causes of Accidents Outside														
Cars, .....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	1	2	5	35.71
Machinery, .....	2	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	3	21.43
Struck by frozen culm, ..	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2	14.29
By falling, .....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	2	3	21.43
Rock rolled on him, ...	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	7.14
Totals, .....	2	1	1	.....	.....	.....	.....	2	1	1	1	5	14	100.00
Grand totals inside and outside, .....	8	6	3	.....	1	4	8	3	6	7	3	7	56	.....

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Miners, .....		1	2	.....	1	1	.....	.....	1	.....	.....	2	8
Miners' laborers, .....	1	.....	.....	.....	1	.....	.....	.....	1	.....	.....	.....	3
Machine helpers, .....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1
Doorboys and helpers, .....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1
Spraggers, .....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Chargemen, .....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Footmen, .....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	2
Starters, .....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1
Totals, .....	2	1	3	.....	2	3	2	1	2	.....	.....	2	18
Outside													
Miners, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1
Drillers, .....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	2
Watchmen, .....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Spraggers, .....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Laborers, .....	1	.....	.....	.....	.....	.....	1	.....	.....	1	.....	.....	3
Totals, .....	1	1	1	.....	2	.....	1	.....	.....	1	.....	1	8
Grand totals inside and outside, .....	3	2	4	.....	4	3	3	1	2	1	.....	3	26

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Assistant mine foremen, .....			1				4		1				1
Miners, .....	4	4	1		1	3	4	1	1	4	1		24
Miners' laborers, .....		1	1			1	3		1	1		2	10
Drivers and runners, .....	1								2				3
Starters, .....	1		1				1						1
Loaders, .....							1						1
Footmen, .....			1							1			1
Timbermen, .....											1		1
Totals, .....	6	5	2		1	4	8	1	5	6	2	2	42
Outside													
Machine runners, .....												1	1
Engineers and firemen, .....									1				1
Slatepickers (boys), .....	1												1
Oilors, .....										1			1
Runners, .....								1				1	2
Jig runners, .....	1												1
Laborers, .....		1	1					1			1	3	7
Totals, .....	2	1	1					2	1	1	1	5	14
Grand totals inside and outside, .....	8	6	3		1	4	8	3	6	7	3	7	56

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
American, .....	1	1	1	....	1	2	1	1	....	1	....	1	10
Irish, .....	....	....	....	....	....	....	....	....	1	....	....	....	1
Polish, .....	....	1	1	....	....	1	....	....	....	....	....	....	3
Italian, .....	....	....	1	....	....	....	1	....	....	....	....	1	3
Slavonian, .....	....	....	....	....	....	....	....	....	1	....	....	....	5
Lithuanian, .....	....	....	....	....	1	....	....	....	....	....	....	....	1
Austrian, .....	....	....	1	....	....	....	1	....	....	....	....	....	2
Russian, .....	....	....	....	....	....	....	....	....	....	....	....	1	1
Totals, .....	3	2	4	....	4	3	3	1	2	1	....	3	26

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
American, .....	5	2	....	....	1	....	1	1	5	4	2	4	25
Irish, .....	....	....	....	....	....	1	....	....	....	....	....	....	1
Polish, .....	1	....	....	....	....	....	....	1	....	....	....	1	5
Italian, .....	....	....	....	....	....	....	....	1	....	....	....	....	2
Slavonian, .....	....	2	1	....	....	....	....	....	....	....	....	....	3
Lithuanian, .....	1	1	1	....	....	1	7	....	1	2	....	....	14
Austrian, .....	....	....	....	....	....	....	....	....	....	....	....	1	1
Russian, .....	1	1	1	....	....	....	....	....	....	1	....	....	4
Greek, .....	....	....	....	....	....	....	....	....	....	....	1	....	1
Totals, .....	8	6	3	....	1	4	8	3	6	7	3	7	56

TABLE I.—Operators and mines, kind of openings, type and size of fans, size of furnaces, volume of air produced by fan or furnace per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	Kind of opening	Gaseous or non-gaseous	Method of ventilation	Diameter of fan in feet and inches	Width of blades in feet and inches	Depth of blades in feet and inches	Number of revolutions per minute	Water gauge developed—in inches	Name of fan	Power used	Number of splits of air currents	Number of cubic feet of air per minute entering the mine at inlet	Total number of cubic feet of air per minute circulating in all the splits	Number of cubic feet of air per minute passing out at outlet	Number of persons employed inside
Leligh Valley Coal Co.	Slope,...		{ 2 Fans, ..	{ 12	4	4	75	.6	Guibal, ....	Steam, .....	7	81,000	81,000	90,000	192
Centralia Colliery	Shaft,...	Gaseous, ..	{ 2 Fans, ..	{ 15	5	5	75								
Continental	Slope,...		{ 2 Fans, ..	{ 12	3.6	1.9	77	.5	{ Guibal, ...	Gasoline, ...	2	18,000	18,000	21,000	58
Locust Run	Slope,...		{ Fan, ...	{ 20	5.10	6.8	71	.7	{ Guibal, ...	Steam, .....	2	15,000	15,000	18,000	46
Logan	Slope,...		{ Fan, ...	{ 6	4.8	1.1	197	.5	Sturtevant, ..	Electricity, ..	4	30,000	20,000	35,000	60
Savre Colliery:	Slope,...		{ Fan, ...	{ 15	4	3	75	.6	Guibal, ....	Steam, .....	4	38,800	38,000	42,000	61
Savre	Shaft,...	Gaseous, ..	Fan, .....	20	6.8	6.1	60		Guibal, ....	Steam, .....	8	44,000	44,000	48,000	248
Stonix No. 3	Slope,...	Gaseous, ..	Fan, .....	16	4.8	5.10	85	.6	Guibal, ....	Steam, .....	9	66,000	66,000	70,000	
Morris Ridge	Slope,...	Non-gas, ..	Natural, ..												
Packer No. 5 Colliery:															
Packer No. 5	Shaft,...	Gaseous, ..	Fan, .....	20	6	5.6	73	1.4	Guibal, ....	Steam, .....	9	95,000	95,000	100,000	165
Packer No. 5	Drift,...	Gaseous, ..	Fan, .....	15	4.1	4.7	76	1.1	Guibal, ....	Steam, .....	9	78,000	78,000	81,000	184
Packer No. 2 Colliery:															
Packer No. 2	Slope,...	Gaseous, ..	Fan, .....	20	6	5.5	63	1	Guibal, ....	Steam, .....	5	68,000	68,000	72,000	168
Packer No. 3 Colliery:															
Packer No. 3	Slope,...	Gaseous, ..	Fan, .....	18	6	5.4	70	.6	Guibal, ....	Steam, .....	10	97,000	97,000	100,000	169
Packer No. 4 Colliery:															
Packer No. 4	Slope,...	Gaseous, ..	Fan, .....	20	6.9	5.11	63	1	Guibal, ....	Steam, .....	12	65,000	65,000	68,000	148





TABLE I.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	Name of General Superintendent	Post Office	Name of Superintendent	Post Office	Railroad to Mine
Lehigh Valley Coal Co. Central No. 1 Packer No. 2 Packer No. 3 Packer No. 4 Sayre	Columbia, Schuylkill, Schuylkill, Schuylkill, Schuylkill, Northumberland,	Thomas Thomas, .....	Wilkes-Barre, .....	H. J. Hoffner, .....	Centralia, .....	Lehigh Valley
Philadelphia and Reading Coal and Iron Co. Hammond, .....	Schuylkill, Schuylkill, Schuylkill, Columbia,	{ W. J. Richards, Gen- eral Manager, .....	Pottsville, .....	Reese Tasker, .....	Pottsville, .....	P. and R.
Midvalley Coal Co. Midvalley, .....	Columbia, .....	T. E. Snyder, General Manager, .....	Hazleton, .....	H. D. Kostenbauder, .....	Wilburton, .....	Lehigh Valley
Girard Mammoth Coal Co. Girard Mammoth, .....	Schuylkill, .....	.....	.....	William Palmer, .....	Raven Run, .....	P. and R.
W. R. McCurtick Coal Co. Girard Bear Ridge, .....	Schuylkill, .....	W. R. McCurtick, .....	Philadelphia, .....	Jacob M. Holt, .....	Girardville, .....	P. and R.
Harleigh Brockwood Coal Co. West Bear Ridge, .....	Schuylkill, .....	Frank A. Hall, .....	Pottsville, .....	John Price, Inside, F. L. Klock, Outside, .....	Shenandoah, .....	P. and R.
Beaver Valley Coal Co. Scotch Valley, .....	Columbia, .....	.....	.....	Daniel Lavan, .....	Beaver Valley, .....	Pennsylvania
Pioneer Coal Co. Pioneer, .....	Schuylkill, .....	.....	.....	John Dreshman, .....	Ashtand, .....	.....

TABLE 2.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured, quantity of powder, dynamite and permissible explosives used, etc.

Names of Operators and Collieries	County	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employees	Number of fatal accidents	Number of non-fatal accidents	Explosives			Number of horses and mules
										Number of pounds of powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used	
Lehigh Valley Coal Co.	Columbia,	378,289	43,817	5,833	407,939	242	808	2	10	1,025	200,721	79	
Centralia,	Schuylkill,	324,320	15,286	.....	339,606	7	341	4	15	102,000	95,842	32	
Packer No. 5,	Schuylkill,	126,552	14,501	.....	141,053	7	238	1	2	33,900	17,806	26	
Packer No. 2,	Schuylkill,	136,901	1,535	.....	138,436	7	282	1	2	18,075	21,439	31	
Packer No. 3,	Schuylkill,	103,530	63,976	8,806	166,372	242	487	2	1	51,575	11,740	32	
Packer No. 4,	Schuylkill,	260,382	47,914	3,246	311,512	242	743	3	2	15,025	129,107	39	
Sayre,	Northumberland,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Totals,	.....	1,309,974	177,029	17,945	1,504,948	.....	3,099	13	32	221,600	476,715	239	
Philadelphia and Reading Coal and Iron Co.	Columbia,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Hammond,	Schuylkill,	330,306	39,253	8,422	377,981	248	830	4	5	725	89,962	48	
East,	Schuylkill,	211,739	56,119	11,029	278,887	251	785	1	3	10,475	100,196	83	
Bear Ridge,	Schuylkill,	.....	3,934	.....	3,934	.....	48	.....	.....	.....	631	7	
Potts,	Columbia,	392,116	45,621	7,013	384,750	265	700	2	5	.....	58,055	70	
Totals,	.....	844,161	144,927	26,464	1,015,552	.....	2,361	7	13	11,200	248,844	268	
Midvalley Coal Co.	Columbia,	276,299	38,040	2,838	317,177	239	587	3	5	7,425	162,875	66	
Girard Mammoth Coal Co.	Schuylkill,	96,333	15,000	433	111,766	137	361	2	2	23,275	27,750	19	
Girard Mammoth,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

\*Lbs.

\*Coal prepared at Packer No. 4.

TABLE 2—Continued

Names of Operators and Collieries	County	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives	Number of pounds of		
											permissible explosives used		
											Number of pounds of dynamite used		
											Number of pounds of powder used		
W. R. McTurk Coal Co.	Schuylkill,.....	96,890	21,683	86	118,659	219	303	.....	4	.....	.....	.....	28
Girard Bear Ridge, .....	Schuylkill,.....	.....	.....	.....	.....	.....	.....	.....	.....	25,850	.....	.....	4
Harleigh Brookwood Coal Co.	Schuylkill,.....	10,415	456	.....	10,871	182	49	.....	.....	8,000	625	.....	.....
West Bear Ridge, .....	Schuylkill,.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Beaver Valley Coal Co.	Columbia, .....	3,752	662	119	4,533	60	71	1	.....	3,500	1,250	750	2
Scotch Valley, .....	Columbia, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pioneer, .....	Schuylkill,.....	.....	115	571	686	50	9	.....	.....	.....	150	.....	3
Dressman Coal Co.	Schuylkill,.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand totals, .....	.....	2,637,824	307,912	48,456	3,084,192	.....	6,846	26	56	953,534	265,525	125,181	569

TABLE 2.—Part 2

Names of Operators	County	Number of Boilers			Locomotives			Number of steam engines of all classes	Total horse power	Number of pumps delivering water to surface	Capacity in gallons per minute	Quantity delivered to surface per minute—gallons	Number of electric dynamos	Number of air compressors
		Cylindrical	Horse power	Tubular	Horse power	Total horse power	Steam	Air	Electric					
Lehigh Valley Coal Co., .....	Columbia,	15	555	57	11,000	11,555	13	.....	26	171	17,032	18	21,150	2
Philadelphia and Reading Coal and Iron Co., .....	Schuylkill, .....	24	876	59	6,750	7,626	10	5	.....	127	15,705	15	18,378	5
Midvalley Coal Co., .....	Columbia,	.....	.....	16	3,000	3,000	10	.....	.....	10	889	7	7,830	1
Grand Mammoth Coal Co., .....	Columbia,	.....	.....	8	1,600	1,600	8	.....	.....	3	375	5	6,000	1
W. R. Murtuk Coal Co., .....	Schuylkill, .....	.....	.....	12	2,582	2,582	5	.....	.....	17	1,550	1	6,400	2
Harleigh Brookwood Coal Co., .....	Schuylkill, .....	.....	.....	1	100	100	.....	.....	.....	1	30	.....	.....	.....
Beaver Valley Coal Co., .....	Columbia,	.....	.....	2	300	300	.....	.....	.....	4	105	.....	.....	.....
Breshman Coal Co., .....	Schuylkill, .....	.....	.....	1	125	125	.....	.....	.....	2	80	.....	.....	.....
Totals, .....	.....	39	1,431	156	25,467	26,898	46	5	28	335	35,766	46	53,758	10



TABLE 3.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside										Outside								Grand total inside and outside		
		Mine foremen	Assistant mine foremen	Fire bosses and assistants	Miners	Miners' laborers	Drivers and runners	Doorboys and helpers	Pumpmen	Company men	All other employes	Total inside	Superintendents	Firemen	Blacksmiths and carpenters	Engineers and firemen	Slatepickers (boys)	Slatepickers (men)	Bookkeepers and clerks	All other employes	Total outside	
Lehigh Valley Coal Co.	Columbia	14	39	.....	654	540	108	37	26	.....	692	2,110	1	12	78	143	53	19	14	649	989	2,099
Philadelphia and Reading Coal and Iron Co.	Schuylkill	5	28	.....	206	196	80	49	13	380	495	1,452	.....	8	31	116	108	53	15	578	912	2,361
Midvalley Coal Co.	Columbia	3	.....	6	114	112	28	4	6	106	.....	379	1	2	15	28	23	10	3	126	208	587
Girard Mammoth Coal Co.	Schuylkill	1	1	2	43	18	10	1	6	49	.....	181	1	1	11	30	45	1	2	112	232	364
W. R. McTurk Coal Co.	Schuylkill	1	.....	1	8	26	7	5	2	.....	35	85	1	1	9	20	39	.....	2	116	218	303
Harleigh Brookwood Coal Co.	Schuylkill	1	.....	.....	21	12	2	.....	.....	5	.....	41	.....	.....	.....	.....	.....	.....	.....	8	8	49
Beaver Valley Coal Co.	Columbia	1	.....	.....	8	16	2	.....	.....	5	.....	32	1	.....	3	4	4	.....	.....	26	39	71
Dreshman Coal Co.	Schuylkill	.....	.....	.....	.....	7	1	.....	.....	1	.....	4	.....	.....	.....	.....	1	1	.....	3	5	9
Totals		26	68	9	1,074	922	238	96	53	546	1,222	4,234	5	24	150	342	273	83	37	1,698	2,612	6,846



TABLE 4.—Fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 9	Simond Romanis, ...	Slavonian, ..	Laborer, ..	25	M.	1	....	Hammond, .....	Schuykill, .....	Killed by fall of slate at face of breast while pulling down loose material.
17	Michael Kofar, .....	Slavonian, ..	Chargeman, ..	29	M.	1	5	Hammond, .....	Schuykill, .....	Killed by falling down shaft from third to fourth level.
31	Joseph Flaherty, ....	American, ..	Laborer, ..	54	M.	1	6	Hammond, .....	Schuykill, .....	Killed by frozen culm rolling off bank on him. Outside.
Feb. 12	Edward Minzer, .....	American, ..	Watchman, ..	22	S.	....	....	Scotch Valley ...	Columbia, .....	Suffocated by coal gas from locomotive. He put an iron plate on the stack and lay down in cab and was found dead in the morning. Outside.
27	Charles Truscuskie, ..	Polish, .....	Miner, ....	32	S.	....	....	Midvalley, .....	Columbia, .....	Killed by fall of coal at face of breast while dressing off after a blast.
March 1	Joseph Miller, .....	American, ..	Spragger, ..	18	S.	....	....	Packer No. 5, ..	Schuykill, .....	Killed by being bumped between cars on turnout at bottom of shaft.
27	Frank Serleskie, .....	Austrian, ...	Miner, ....	32	M.	1	3	Packer No. 5, ..	Schuykill, .....	Killed by fall of coal at face of breast while dressing off after a blast.
	Adolph Wisloskie, ..	Polish, .....	Miner, ....	45	M.	1	4	Packer No. 4, ..	Schuykill, .....	Killed by fall of coal in face of pillar robbing while drilling in a loose piece.
	Tony Wyzorio, .....	Italian, .....	Spragger, ..	42	M.	1	7	Packer No. 3, ..	Schuykill, .....	Killed by being squeezed between car and timber under dump chute. Car jumped the track. Outside.
May 24	{ Michael Zuke, .....	Slavonian, ..	Driller, ...	52	M.	1	2	} Packer N. 5, ..	Schuykill, .....	Fatally burned by explosion of powder in a stripping while tamping powder with an iron bar it ignited and set off two kegs of powder at top of the hole. Outside.
	{ John Arremick, ....	Slavonian, ..	Driller, ...	52	M.	1	....		Schuykill, .....	
31	Anthony Kotopski, ...	American, ..	Miner, ....	25	S.	....	....	Grand Mammoth, ..	Schuykill, .....	Killed by fall of coal while robbing pillars.
	Anthony Kotowski, ...	Lithuanian, ..	Laborer, ..	27	M.	1	1	Sayre, .....	Northumberland, ..	Killed by being shocked by an electric wire, 250 volts, and falling from top of mine car.
June 13	John Foss, .....	American, ..	Doortender, ..	20	S.	....	....	Hammond, .....	Schuykill, .....	Killed by cars on gangway near a door that he was tending.
1	Fred Oestrich, .....	American, ..	Starter, ..	26	S.	....	....	Potts, .....	Columbia, .....	Killed by rush of coal in chute near gangway while starting chute.

June	19	Thomas Roschuskie, ..	Polish, .....	Miner, .....	39	S.	....	....	Midvalley, .....	Columbia, .....	Suffocated at face of chute. He fired three blasts and went back into chute and was suffocated by fire damp.
July	11	James Fararo, .....	Italian, .....	Laborer, ..	25	S.	....	....	Girard Mammoth, .....	Schuylkill, .....	Killed by locomotive. He was working on the track and the locomotive, which was on a grade, started suddenly and caught him. Outside.
	12	George Rushor, .....	American, ..	Footman, ..	28	S.	....	....	Sayre, .....	Northumberland, ..	Killed by fall of coal at face of breast.
	20	Charles Bullets, .....	Austrian, ..	Machine helper, ..	26	M.	1	1	East, .....	Schuylkill, .....	Killed by fall of slate. He was working in a shaft that was being sunk, which cut into breast, and while making a place for a prop the top fell on him.
Aug.	16	Martin Magginnis, ....	American, ..	Footman, ..	37	M.	1	2	Packer No. 4, ..	Schuylkill, .....	Killed by being struck by flying material from a runaway car that became uncoupled on slope.
Sept.	5	Domnick Barret, .....	Irish, .....	Miner, .....	35	M.	1	3	Packer No. 2, ..	Schuylkill, .....	Killed by explosion of gas at face. Gas was ignited by another miner.
	18	Michael Danyen, .....	Slavonian, ..	Laborer, ..	35	M.	1	1	Centralia, .....	Columbia, .....	Killed by a chain pillar breaking and carrying him down into an old breast.
Oct.	1	Thomas McGulre, .....	American, ..	Laborer, ..	26	M.	1	3	Potts, .....	Columbia, .....	Killed by gumbat at top of slope. He was being hoisted up the slope. The engineer did not stop at the regular stopping place and he jumped and was caught by wheels of boat. Outside.
Dec.	7	Joseph Urban, .....	Italian, .....	Miner, .....	25	S.	....	....	Midvalley, .....	Columbia, .....	Killed by falling under trip of cars while attempting to board the trip to ride to his work. Outside.
		Daniel Darrab, .....	American, ..	Miner, .....	41	M.	1	....	Centralia, .....	Columbia, .....	Killed by fall of rock in robbing pillars. He was cutting a hitch for a prop when top fell on him.
	20	Enoch Bender, .....	Russian, ....	Miner, .....	23	M.	1	2	Sayre, .....	Northumberland, ..	Killed by fall of top rock at face of breast. He fired a blast, which displaced two props, and when he went back to see the result of the blast the top fell on him.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 9	Alfred McHugh, .....	American, ..	Slatepicker, .....	18	S. Potts, .....	.....	Columbia, .....	Leg fractured by starting stalled machinery with his foot. Outside.
12	Ray Miller, .....	American, ..	Miner, .....	35	M. Potts, .....	.....	Columbia, .....	Hands and neck burned by explosion of gas at face.
19	George Long, .....	American, ..	Driver, .....	31	M. Potts, .....	.....	Columbia, .....	Face lacerated by being kicked by a mule on gangway.
	John Dancer, .....	American, ..	.....	20	S. Potts, .....	.....	Columbia, .....	Hip and ankle fractured by rush of coal at battery.
	Anthony Alinski, ....	Lithuanian, ..	Starter, .....	29	S. Hammond, .....	.....	Schuylkill, .....	.....
20	Staney Mislinski, ....	Polish, .....	Miner, .....	24	S. Midvalley, .....	.....	Columbia, .....	Face and hands burned by explosion of gas at face of breast.
22	Joe Bracco, .....	American, ..	Jig tender, .....	17	S. Packer No. 4, .....	.....	Schuylkill, .....	Arm cut off while trying to remove a flight on drag line. Outside.
24	Anthony Gedritis, ....	Russian, .....	Miner, .....	38	M. Packer No. 5, .....	.....	Schuylkill, .....	Face and hands burned by explosion of gas in heading.
Feb. 9	Isaac Gulliver, .....	American, ..	Miner, .....	35	M. Centralia, .....	.....	Columbia, .....	Leg fractured by fall of coal while robbing pillars.
7	Albert Smith, .....	American, ..	Miner, .....	55	M. Hammond, .....	.....	Schuylkill, .....	Arm fractured by fall of coal while robbing pillars.
17	John Broskey, .....	Lithuanian, ..	Miner, .....	56	M. Packer No. 3, .....	.....	Schuylkill, .....	Leg fractured by car running up wrong track on slope.
23	Enock Shakilo, .....	Russian, ....	Miner, .....	33	M. Sayre, .....	.....	Northumberland, .....	Leg fractured by rush of coal at battery.
	Michael Watson, .....	Slavonian, ..	Laborer, .....	26	S. Centralia, .....	.....	Columbia, .....	Hip fractured by rush of gob at face of gangway.
27	Michael Drabanstock, ..	Slavonian, ..	Laborer, .....	33	M. Girard Bear Ridge, ..	.....	Schuylkill, .....	Leg fractured by frozen lump of culm rolling on him. Outside.
March 1	Walter Urbanavage, ..	Lithuanian, ..	Miner, .....	34	M. Packer No. 5, .....	.....	Schuylkill, .....	Leg fractured by fall of coal at face of gangway.
16	Elick Connetski, .....	Russian, ....	Laborer, .....	50	S. Centralia, .....	.....	Columbia, .....	Arm fractured by being caught between car and platform at breaker. Outside.
26	George Kuplo, .....	Slavonian, ..	Laborer, .....	52	M. East, .....	.....	Schuylkill, .....	Leg fractured while coupling cars on gangway.
May 28	Bernard Sheran, .....	American, ..	Miner, .....	35	M. East, .....	.....	Schuylkill, .....	Tops of two fingers blown off by explosion of dynamite caps.



June	3	Patrick Noon, .....	Irish, .....	Miner, .....	59	M	Packer No. 3, .....	Schuykill, .....	Face lacerated by explosion of blast. He went back to shot at battery.
	4	John Dambuskie, ....	Polish, .....	Miner, .....	33	M	Midvalley, .....	Columbia, .....	Leg fractured by fall of coal at face of breast.
	7	Victor Murgorage, ....	Lithuanian, .....	Laborer, .....	20	S	Packer No. 5, .....	Schuykill, .....	Pelvis fractured by fall of coal in breast heading.
	10	Joseph Keritskie, ....	Polish, ....	Miner, .....	30	S	Girard Mammoth, ...	Schuykill, .....	Leg fractured by fall of coal at face of gangway.
July	16	Enoch Custenskie, ....	Lithuanian, .....	Laborer, .....	23	S	Packer No. 5, .....	Schuykill, .....	Hands and neck burned by explosion of gas in chute.
	17	George Bilskie, .....	Lithuanian, .....	Laborer, .....	24	S	Bast, .....	Schuykill, .....	Leg fractured by cars on gangway.
	18	Charles Radzavage, ..	Lithuanian, .....	Miner, .....	32	M	Packer No. 5, .....	Schuykill, .....	Leg fractured by fall of coal at face of breast.
	23	Joseph Aleckner, .....	Lithuanian, .....	Miner, .....	40	M	Packer No. 5, .....	Schuykill, .....	Compound fracture of leg by fall of coal at face of chute.
	26	David Davis, .....	American, ..	Loader, .....	20	S	Potts, .....	Columbia, .....	Head crushed by falling timber on gangway.
	27	{ John Mardis, .....	Lithuanian, .....	Miner, .....	35	M	{ Packer No. 5, .....	{ Schuykill, .....	{ Head and hands burned by explosion of gas at face.
		{ George Matatinas, ..	Lithuanian, .....	Miner, .....	26	S			{ Face and hands burned by explosion of gas at face.
	29	Albert Wasser, .....	Lithuanian, .....	Laborer, .....	19	S	Packer No. 5, .....	Schuykill, .....	Hips bruised by being caught between car and chute on gangway.
Aug.	14	William McNellis, ....	American, ..	Runner, .....	19	S	Centralia, .....	Columbia, .....	Arm fractured by falling off a box car. Outside.
	20	Enoch Nevetzkie, ....	Polish, .....	Miner, .....	40	M	Midvalley, .....	Columbia, .....	Hip fractured by fall of slate at face of breast.
	28	Angello Delario, .....	Italian, .....	Laborer, .....	20	S	Centralia, .....	Columbia, .....	Leg fractured by rock falling on him in stripping. Outside.
Sept.	3	William Harris, .....	American, ..	Driver, .....	43	M	Midvalley, .....	Columbia, .....	Pelvis fractured by being caught between car and timber on gangway.
	5	Joe Weychunes, .....	Lithuanian, ..	Laborer, .....	42	M	Packer No. 2, .....	Schuykill, .....	Face and hands burned by explosion of gas.
	13	Michael McDonald, ...	American, ..	Miner, .....	38	S	Packer No. 5, .....	Schuykill, .....	Hands and face burned by explosion of gas.
	23	Archie Payne, .....	American, ..	Engineer, .....	27	M	Centralia, .....	Columbia, .....	Ligaments of foot torn by being caught in chain drive of engine. Outside.
	24	Thomas Cavanaugh, ...	American, ..	Assistant foreman, ..	28	M	Packer No. 5, .....	Schuykill, .....	Hands and face burned by explosion of gas at face.
	28	James Dunlavey, .....	American, ..	Driver, .....	30	S	Packer No. 5, .....	Schuykill, .....	Body bruised by being caught between cars on gangway.
Oct.	5	William Rockwell, ...	American, ..	Footman, .....	22	S	Midvalley, .....	Columbia, .....	Compound fracture of arm. Caught between cars on bottom of slope.
	9	Patrick Sheridan, ....	American, ..	Oiler, .....	17	S	Packer No. 5, .....	Schuykill, .....	Knee bruised by being bumped between cars. Outside.
	11	Martian Ryan, .....	American, ..	Miner, .....	53	M	Centralia, .....	Columbia, .....	Leg fractured by fall of coal at face of breast.
	16	George Mallams, .....	American, ..	Laborer, .....	32	M	Girard Bear Ridge, .	Schuykill, .....	Leg fractured by lump of coal rolling on him while loading car.
	19	John Derish, .....	Lithuanian, ..	Miner, .....	36	M	Packer No. 5, .....	Schuykill, .....	Face and body lacerated by premature blast at face of breast.
	22	Charles Obolinsky, ...	Lithuanian, ..	Miner, .....	32	M	Packer No. 5, .....	Schuykill, .....	Collar bone fractured by fall of coal at face of airway.

TABLE 5—Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Oct. 23	Adam Paleski, .....	Russian, ...	Miner, .....	34	M.	Sayre, .....	Northumberland,	Internally injured by fall of coal at face
Nov. 8	Pater Shoder, .....	Greek, .....	Miner, .....	40	M.	Hammond, .....	Schuylkill, .....	Arm fractured while tamping dynamite at face.
11	Dan Carey, .....	American, ..	Driver, .....	21	S.	Hammond, .....	Schuylkill, .....	Leg fractured by falling under cars. Outside.
18	Charles Nice, .....	American, ..	Timberman, ..	51	M.	Centralia, .....	Columbia, .....	Foot fractured by old timber falling on it on gangway.
Dec. 7	Alfred Burg, .....	American, ..	Runner, .....	20	S.	Centralia, .....	Columbia, .....	Compound fracture of ankle. Caught by cars. Outside.
10	Peter Engleman, .....	American, ..	Laborer, .....	50	M.	Girard Bear Ridge, ..	Schuylkill, .....	Leg fractured by being bumped between cars. Outside.
20	John Horn, .....	American, ..	Laborer, .....	25	S.	Packer No. 2, .....	Schuylkill, .....	Face and hands burned by explosion of gas.
	Michael Joyce, .....	American, ..	Laborer, .....	21	S.	Girard Mammoth, ...	Schuylkill, .....	Arm fractured by falling in breaker. Outside.
21	Lewis Dincavage, .....	Austrian, ...	Laborer, .....	23	M.	Centralia, .....	Columbia, .....	Ankle fractured. A plank that they were loading rushed on him. Outside.
24	Walley Dubiskie, .....	Polish, .....	Laborer, .....	25	S.	Hammond, .....	Schuylkill, .....	Leg fractured by fall of coal in chute.
28	Carl Mecallo, .....	Italian, .....	Machine runner, ..	30	S.	Girard Bear Ridge, ..	Schuylkill, .....	Leg fractured by jumping off car. Outside.

## CONDITION OF COLLIERIES

## LEHIGH VALLEY COAL COMPANY

Centralia, Packer Nos. 2, 3, 4, 5, and Sayre Collieries.—Ventilation, drainage and condition as to safety, good.

## PHILADELPHIA AND READING COAL AND IRON COMPANY

Hammond, Bast, Bear Ridge and Potts Collieries.—Ventilation, drainage and condition as to safety, good.

## MIDVALLEY COAL COMPANY

Midvalley Colliery.—Ventilation and condition as to safety, good. Drainage, fair.

## GIRARD MAMMOTH COAL COMPANY

Girard Mammoth Colliery.—Ventilation, drainage and condition as to safety, good.

## W. R. McTURK COAL COMPANY

Girard Bear Ridge Colliery.—Ventilation and condition as to safety, good. Drainage, fair.

## HARLEIGH BROOKWOOD COAL COMPANY

West Bear Ridge Colliery.—Ventilation fair. Drainage and condition as to safety, good.

## BEAVER VALLEY COAL COMPANY

Scotch Valley Colliery.—Ventilation fair. Drainage and condition as to safety, good.

## DRESHMAN COAL COMPANY

Pioneer Colliery.—Ventilation and drainage fair. Condition as to safety, good. The breaker was destroyed by fire November 2. The colliery was idle for 2 months before the destruction of the breaker.

## IMPROVEMENTS

## PHILADELPHIA AND READING COAL AND IRON COMPANY

Potts Colliery.—A tunnel 100 feet long was completed from West Orchard gangway on 2nd lift to Primrose slope.

A skip was taken off the 1st lift tunnel for a turnout between Tracy and Diamond veins, a distance of 100 feet.

Bast Colliery.—A tunnel 342 feet long was completed from East Mammoth 3rd lift gangway 2,900 feet east of hoisting slope to Buck Mountain vein.

The contractor started to sink the new coal hoisting shaft on January 9. Probable depth of shaft, 1,389 feet. The shaft has 4 compartments, each 7 feet by 12 feet 8 inches in the clear.

A single and double track tunnel is being driven to and around the coal shaft from East Buck Mountain gangway 2nd lift; 392 feet driven to December 31.

A rock slope 150 feet east of coal hoisting shaft on 65 degree pitch, to be used for airway, was sunk from surface to Skidmore vein; distance, 109 feet. From this point they are sinking a slope 13 feet wide by 8 feet high in Skidmore vein to be used for airway; 309 feet sunk to December 31. An air hole 20 feet wide by 5 feet high is being driven in Skidmore vein from 2nd lift to a point 390 feet below the bottom of the above rock slope. Total length of airway in Skidmore vein, 581 feet. The above will make one continuous airway with 100 square feet area.

Hammond Colliery.—A single and double track tunnel from Buck Mountain vein, 3rd lift driven northward to coal hoisting shaft, was completed; distance, 1,181 feet. A single and double track tunnel from Buck Mountain vein 4th lift to coal hoisting shaft connected at a distance of 1,162 feet. An empty car tunnel is being driven from main tunnel, south of shaft and east of same; 217 feet driven to December 31. An air tunnel 8 by 12 feet from Monkey gangway off East Buck Mountain gangway 4th lift to the Mammoth vein, Monkey gangway, 4th lift, on line of Skidmore airway, was completed, distance 258 feet.

An airway in Skidmore vein was completed from the 3rd lift to the bottom of rock slope and concrete air shaft, distance, 939 feet. New 40 by 60 inch hoisting engines are being erected for the new coal hoisting shaft.

Concrete foundations have been completed for a 21-foot exhaust fan at top of new Skidmore airway.

#### GIRARD MAMMOTH COAL COMPANY

Girard Mammoth Colliery.—The breaker was totally destroyed by fire on the night of August 5. A new breaker has been erected and is in operation.

#### MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in Union Hall, Pottsville, April 1 and 2.

The Board of Examiners was composed of the following persons: James A. O'Donnell, Mine Inspector, Centralia; Jacob M. Holt, Superintendent, Girardville; John Meredith, Miner, Ashland; and Henry Krapf, Miner, Ashland. The following persons passed a satisfactory examination and were granted certificates:

#### MINE FOREMEN

Peter J. Conway, James J. Haffey, John W. Marsh, Richard J. Kane.

#### ASSISTANT MINE FOREMEN

Martin I. Tarpey, Centralia; Peter McManamen, Wilburton; P. J. Malloy, Connetton; Aaron Green, William Delahanty, John Sheridan, Raymond Nattress, Girardville; Martin Monaghan, Lost Creek; William Evans, Ashland.

## FIFTEENTH DISTRICT

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NORTHUMBERLAND COUNTY

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Mount Carmel, Pa., February 5, 1913.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor of transmitting herewith my Annual Report as Inspector of Mines for the Fifteenth Anthracite District, for the year ending December 31, 1912.

Respectfully submitted,

BENJAMIN I. EVANS, Inspector.



## SUMMARY OF STATISTICS

Number of collieries, .....	10
Number of mines, .....	27
Number of mines in operation, .....	27
Number of tons of coal shipped to market, .....	2,574,203
Number of tons used at mines for steam and heat, .....	296,959
Number of tons sold to local trade and used by employes, ..	143,459
Number of tons produced, .....	3,014,621
Number of tons produced by compressed air machines, ...	.....
Number of tons produced by electrical machines, .....	.....
Number of persons employed inside of mines, .....	5,337
Number of persons employed outside, .....	2,019
Number of fatal accidents inside of mines, .....	18
Number of fatal accidents outside, .....	3
Number of non-fatal accidents inside of mines, .....	28
Number of non-fatal accidents outside, .....	5
Number of tons of coal produced per fatal accident inside, ..	167,479
Number of tons produced per fatal accident outside, .....	1,004,873
Number of tons produced per fatal accident inside and outside, .....	143,553
Number of persons employed per fatal accident inside, ...	296
Number of persons employed per fatal accident outside, ..	673
Number of persons employed per fatal accident inside and outside, .....	350
Number of persons employed per non-fatal accident in- side, .....	191
Number of persons employed per non-fatal accident out- side, .....	404
Number of persons employed per non-fatal accident inside and outside, .....	223
Number of wives made widows, .....	12
Number of children made orphans, .....	25
Number of steam locomotives used inside of mines, .....	.....
Number of steam locomotives used outside, .....	17
Number of compressed air locomotives used inside, .....	4
Number of compressed air locomotives used outside, ....	.....
Number of electric motors used inside, .....	14
Number of electric motors used outside, .....	.....
Number of fans in use, .....	27
Number of furnaces in use, .....	.....
Number of gaseous mines in operation, .....	11
Number of non-gaseous mines in operation, .....	16
Number of new mines opened, .....	.....
Number of old mines abandoned, .....	.....

TABLE A  
PRODUCTION OF COAL

Names of Operators	Tons
Philadelphia and Reading Coal and Iron Company,.....	1,194,161
Mineral Railroad and Mining Company, .....	943,531
Colonial Collieries Company, .....	326,380
Greenough Red Ash Coal Company, .....	244,603
Enterprise Coal Company, .....	219,408
Excelsior Coal Company, .....	86,538
Total, .....	<u>3,014,621</u>

Production by Counties

Northumberland, .....	<u>3,014,621</u>
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TABLE B—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employees inside	Number of employees outside	Total number of employees	Number of employees inside per fatal accident	Number of employees outside per fatal accident	Number of employees inside per non-fatal accident	Number of employees outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Philadelphia and Reading Coal and Iron Co., .....	9	3	12	7	1	8	170,594	132,685	2,069	682	2,751	230	227	295	682
Mineral Railroad and Mining Co., .....	6	.....	6	11	1	12	85,775	157,255	1,945	675	2,620	324	.....	177	675
Colonial Collieries Co., .....	2	.....	2	2	1	3	163,190	163,190	380	206	586	190	.....	190	206
Greenough Red Ash Coal Co., .....	1	.....	1	4	.....	4	61,150	244,603	395	203	598	395	.....	149	.....
Enterprise Coal Co., .....	.....	.....	.....	2	2	4	109,704	.....	450	188	638	.....	.....	225	94
Excessior Coal Co., .....	.....	.....	.....	2	.....	2	43,269	.....	98	65	163	.....	.....	32	.....
Totals and averages for district, ....	18	3	21	28	5	33	107,665	167,472	5,337	2,019	7,356	296	673	191	404

TABLE C.—Classification of Fatal Accidents Inside and Outside of Mines

	Months												Percentages
	Totals	December	November	October	September	August	July	June	May	April	March	February	
Causes of Accidents Inside													
Falls of coal, .....	1	1						2					5.56
Falls of slate, .....	10				2		1				2	3	55.55
Mine cars, .....	2			1				1					11.10
Explosions of gas, ....	1						1						5.56
Explosions of powder and dynamite, .....	3						2				1		16.67
Falling into shafts, ..	1						1						5.56
Totals, .....	18	1	1	1	2		5	3			3	3	100.00
Causes of Accidents Outside													
Cars, .....	2	1										1	66.67
Machinery, .....	1					1							33.33
Totals, .....	3	1				1						1	100.00
Grand totals inside and outside, .....	21	1	1	1	2	1	5	3				3	.....

TABLE D.—Classification of Non-Fatal Accidents Inside and Outside of Mines

	Months												Percentages	
	January	February	March	April	May	June	July	August	September	October	November	December		Totals
Causes of Accidents Inside														
Falls of coal, .....	1		1		1				1				4	14.28
Falls of slate, .....	1		1		1		1	1					5	17.87
Mine cars, .....	1					1	1		1	1	1		6	21.43
Explosions of gas, .....													2	7.14
Explosions of powder and dynamite, .....	1												1	3.57
Blasts, premature and otherwise, .....	2		1			1			1			1	6	21.43
Falling into slopes, etc., .....		1											1	3.57
Mules, .....		1											1	3.57
Machinery, .....							1						1	3.57
Struck by gate, .....												1	1	3.57
Totals, .....	6	2	3		2	2	3	3	3	1	1	2	28	100.00
Causes of Accidents Outside														
Cars, .....						1		1					2	40.00
Machinery, .....											1		1	20.00
Struck by hammer, .....			1										1	20.00
Struck by piece of rock, .....						1							1	20.00
Totals, .....			1			2		1					5	100.00
Grand totals inside and outside, .....	6	2	4		2	4	3	4	3	1	2	2	33	.....

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Miners, .....	1	2	.....	.....	.....	2	4	.....	1	.....	.....	.....	10
Miners' laborers, .....	2	1	.....	.....	.....	.....	1	.....	1	.....	1	.....	6
Bottommen, .....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1
Loaders, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1
Totals, .....	3	3	.....	.....	.....	3	5	.....	2	1	1	.....	18
Outside													
Loaders, .....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Jigrunners, .....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1
Laborers, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Totals, .....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	3
Grand totals inside and outside, .....	4	3	.....	.....	.....	3	5	1	2	1	1	1	21

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Fire bosses and assistants, ..	...	...	...	...	...	...	...	...	...	1	...	...	1
Miners, .....	...	1	2	...	1	2	1	3	2	...	...	1	16
Miners' laborers, .....	...	...	1	...	1	...	...	...	1	...	...	1	6
Drivers and runners, .....	1	1	...	...	...	...	2	...	...	...	1	...	5
Totals, .....	6	2	3	...	2	2	3	3	3	1	1	2	28
Outside													
Blacksmiths and carpenters,...	...	...	1	...	...	...	...	...	...	...	...	...	1
Drivers, .....	...	...	...	...	...	1	...	...	...	...	...	...	1
Laborers, .....	...	...	...	...	...	1	...	...	...	...	1	...	2
Oilers, .....	...	...	...	...	...	...	...	1	...	...	...	...	1
Totals, .....	...	...	1	...	...	2	...	1	...	...	1	...	5
Grand totals inside and out- side, .....	6	2	4	...	2	4	3	4	3	1	2	2	33



TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
American, .....	1	...	...	...	...	1	1	...	...	...	...	...	3
English, .....	1	...	...	...	...	...	...	...	...	...	...	...	1
Welsh, .....	...	1	...	...	...	...	...	...	...	...	...	...	1
Irish, .....	...	...	...	...	...	1	...	...	...	...	...	...	1
Polish, .....	1	1	...	...	...	1	1	1	1	...	1	...	7
Italian, .....	...	...	...	...	...	...	...	...	...	...	...	1	1
Slavonian, .....	...	...	...	...	...	...	1	...	...	...	...	...	1
Lithuanian, .....	1	...	...	...	...	...	...	...	1	...	...	...	2
Austrian, .....	...	1	...	...	...	...	...	...	1	...	...	...	2
Russian, .....	...	...	...	...	...	...	1	...	...	...	...	...	1
Tyrolean, .....	...	...	...	...	...	...	1	...	...	...	...	...	1
Totals, .....	4	3	...	...	...	3	5	1	2	1	1	1	21

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
American, .....	...	...	2	...	...	1	2	...	...	...	...	...	5
Irish, .....	...	...	...	...	1	...	...	...	...	1	...	...	1
German, .....	...	...	...	...	...	...	...	...	...	...	...	...	1
Polish, .....	2	1	1	...	1	1	1	4	...	...	...	1	13
Slavonian, .....	...	...	...	...	...	1	...	...	...	...	1	...	2
Austrian, .....	1	...	...	...	...	...	...	...	...	...	...	...	1
Russian, .....	2	1	1	...	...	1	...	...	3	...	...	1	9
Greek, .....	...	...	...	...	...	...	...	...	...	...	1	...	1
Totals, .....	6	2	4	...	2	4	3	4	3	1	2	2	33

TABLE I.—Operators and mines, kind of openings, type and size of fans, size of furnaces, volume of air produced by fan or furnace per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	Kind of opening	Gaseous or non-gaseous	Method of ventilation	Diameter of fan in feet and inches	Width of blades in feet and inches	Depth of blades in feet and inches	Number of revolutions per minute	Water gauge developed—in inches	Name of fan	Power used	Number of splits of air currents	Number of cubic feet of air per minute entering the mine at inlet	Total number of cubic feet of air per minute circulating in all the splits	Number of cubic feet of air per minute passing out at outlet	Number of persons employed inside
Philadelphia and Reading Coal and Iron Co. Loenst Spring Colliery:	Slope.....	Gascons, ..	Fan, .....	21	5.6	5.6	80	1.8	Reading, ..	Steam,...	11	23,470	23,000	24,000	618
	Shaft.....	Gascons, ..	Fan, .....	21	5.6	5.6	82	2	Gubbal, ....		9	31,000	29,780	31,670	
	Slope.....	Gascons, ..	Fan, .....	15	4	3.6	88	1	Gubbal, ....		7	42,850	42,000	42,980	
	Slope.....	Gascons, ..	Fan, .....	21	5	4.6	78	1.1	Gubbal, ....		10	87,000	86,600	87,980	
	Slope.....	Non-gas, ..	Fan, .....	15	4	3.6	84	.9	Gubbal, ....		6	42,850	42,000	43,000	
	Slope.....	Non-gas, ..	Fan, .....	12	4	3.6	77	.5	Reading, ..		3	25,228	25,000	25,956	
Alaska Colliery: Alaska No. 1, .....	Shaft.....	Gascons, ..	Fan, .....	18	4.8	5	86	1.5	Gubbal, ....	Steam,....	8	64,289	64,000	64,890	701
	Shaft.....	Gascons, ..	Fan, .....	18	7	6.5	92	1.6	Gubbal, ....		7	86,640	86,000	87,000	
Reliance Colliery: Reliance No. 1, .....	Slope.....	Non-gas, ..	Fan, .....	18	5.6	5.6	76	1.5	Gubbal, ....	Steam,....	8	53,812	53,400	54,000	285
	Slope.....	Non-gas, ..	Fan, .....	18	5.6	5.6	74	1.4	Gubbal, ....		7	43,641	43,000	44,640	
Mineral Railroad and Mining Co. Pennsylvania Colliery: Pennsylvania No. 1, .....	Slope,...	Gascons, ..	Fan, ...	21	6.6	6.3	100	1.5	Mullen, ...	Steam,...	8	79,500	78,479	80,000	751
				16	5.5	5.5	84	1.4	Vulcan, ...		5	60,560	60,000	61,000	
				16	3.6	3.6	90	1.4	Mullen, ...		7	67,890	67,000	68,000	
				16	3.6	3.6	90	1.4	Mullen, ...		7	67,890	67,000	68,000	

Richards Colliery:	Richards No. 1, .....	18	7.2	5.2	95	1.7	Guibal, .....	Steam, .....	8	68,700	68,000	68,800	661
	Richards No. 4, .....	19	6.8	6.4	96	2			7	72,000	72,000	72,000	
	Richards No. 5, .....	16	4.5	4.5	65	1.2			6	64,300	64,000	65,700	
Scott Colliery:	Scott, .....	18	7	5.6	102	2.1	Guibal, .....	Steam, .....	10	185,000	174,679	185,790	630
	Colonial Collieries Co.												
Nuttall Colliery:	Nuttall No. 2, .....	16	4	4.5	62	1	Mullen, ..	Steam, .....	3	41,600	40,650	41,760	380
	Nuttall No. 3, .....	14	4	3.11	65	1.3			3	50,490	50,000	50,300	
	Nuttall No. 4, .....	14	4	3.10	62	1.1			4	59,000	58,500	59,456	
Greenough Red Ash Coal	Greenough No. 4, .....	15	5.4	4.6	124	2.2	Mullen, ..	Steam, .....	6	51,000	49,800	51,300	355
	Greenough No. 8, .....	12	4	4	84	1.4			6	39,000	38,700	39,456	
	Greenough No. 10, .....	9	2.9	3	109	.7			1	18,000	17,676	18,320	
Enterprise Colliery:	Enterprise No. 4, .....	14	3.5	5	120	2.5	Guibal, .....	Steam, .....	4	26,760	26,000	26,856	450
	Enterprise No. 10, .....	14	3.5	5	90	2.2			5	45,000	44,500	45,840	
	Enterprise No. 4, .....	14	4.5	5	80	1			6	24,320	24,000	24,567	
Excelsior Coal Co.	Excelsior, .....	14	3.8	5	60	1	Beadle, .....	Steam, .....	2	21,000	20,764	21,432	98
	Excelsior, .....												

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of operators and Collieries	County	Name of General Superintendent	Post Office	Name of Superin- tendent	Post Office	Railroad to Mine
Philadelphia and Reading Coal and Iron Co. Locust Spring, ..... Locust Gap, ..... Alaska, ..... Reliance, ..... Locust Spring Washery, ... Mineral Railroad and Mining Co. Pennsylvania, ..... Richards, ..... Scott, .....	Northumberland.	W. J. Richards, ....	Pottsville, .....	Reese Tasker, .....	Pottsville, .....	P. and R.
Colonial Railroad and Mining Co. Pennsylvania, ..... Richards, ..... Scott, .....	Northumberland.	Robert A. Quin, ....	Wilkes-Barre, .....	William R. Reinhardt	Shamokin, .....	Pennsylvania
Colonial Collieries Co. Natick, ..... Greenough Red Ash Coal Co. Greenough, .....	Northumberland.	Frank A. Hill, .....	Pottsville, .....	R. H. Buchanan, ....	Pottsville, .....	P. and R.
Enterprise Coal Co. Enterprise, ..... Enterprise Coal Co. Excessior, .....	Northumberland.	Edward Brennan, ...	Shamokin, .....	Jesse Rhoads, .....	Shamokin, .....	Pennsylvania
Enterprise Coal Co. Enterprise, ..... Enterprise Coal Co. Excessior, .....	Northumberland.	William L. Connell, ...	Scranton, .....	E. H. Connell, .....	Shamokin, .....	P. and R.
Enterprise Coal Co. Enterprise, ..... Enterprise Coal Co. Excessior, .....	Northumberland.	Andrew Robertson, ..	Pottsville, .....	A. D. Robertson, ....	Shamokin, .....	P. and R.





TABLE 2—Continued

Names of Operators and Collieries	County	Number of horses and mules			Explosives	Number of pounds of permissible explosives used			Number of pounds of dynamite used	Number of pounds of powder used	Number of non-fatal accidents			Number of fatal accidents			Number of employees			Number of days worked			Total production of coal in tons			Number of tons sold to local trade and used by employees			Number of tons used at collieries for steam and heat			Number of tons of coal shipped to market											
Enterprise Coal Co.	Northumberland,...	54									4						638			196			219,408			303			36,500			182,605											
Enterprise, .....	Northumberland,...																																										
Excelsior Coal Co.	Northumberland,...	19									2						143			221			86,528			378			8,697			77,463											
Excelsior, .....	Northumberland,...																																										
Grand totals, .....	.....	606									3						7,326			.....			3,014,621			143,459			296,939			2,574,293											

TABLE 2.—Part 2

Names of Operators	County	Number of Boilers				Locomotives			Number of steam engines of all classes	Total horse power	Number of pumps delivering water to surface	Capacity in gallons per minute	Quantity delivered to surface per minute—gallons	Number of electric dynamos	Number of air compressors
		Cylindrical	Horse power	Tubular	Horse power	Total horse power	Steam	Air	Electric						
Philadelphia and Reading Coal and Iron Co., .....	Northumberland	.....	.....	54	7,470	7,450	7	4	.....	18,184	13	23,002	6,396	1	8
Mineral Products and Mining Co., .....		.....	.....	44	5,950	5,950	.....	.....	4	7,480	12	8,730	3,762	.....	2
Colonial Collieries Co., .....		.....	.....	14	1,992	1,992	.....	.....	.....	10	3	1,400	1,400	1	1
Greenough Red Ash Coal Co., .....		.....	.....	8	1,300	1,300	.....	.....	4	1,830	3	3,500	3,500	.....	.....
Elbert's Coal Co., .....		.....	.....	10	2,500	2,500	.....	.....	6	1,328	4	6,548	6,548	.....	1
Frederick Coal Co., .....		12	360	2	150	510	.....	.....	.....	41	1	600	550	.....	.....
Totals, .....		12	360	132	19,312	19,772	17	4	14	29,903	36	44,330	21,756	8	13





TABLE 4.—Fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 22	Cleveland Berger, ...	American, ...	Car loader, ...	24	S.	...	...	Locust Spring, ...		Killed by being caught between box car frame and chute under breaker.
24	Arthur Rix, ... Frank Stabinski, ... Louis Graybal, ...	English, ... Polish, ... Lithuanian, ...	Miner, ... Laborer, ... Laborer, ...	53 33 26	M. S. S.	1 ... ...	1 ... ...	Alaska, ...		Killed by fall of slate. Rix was driving gangway in the top split of Mammoth seam. Some bad pieces of slate were discovered on the gangway about 250 feet outside the footwall. Rix and his two helpers were ordered to secure it. While Rix was making an examination of the place the top slate fell on him and the helpers.
Feb. 6	William Davies, ...	Welsh, ...	Laborer, ...	45	M.	1	3	Natalie, ...		Instantly killed by fall of top slate while striking a big hole at face of gangway.
7	John Stansbeck, ...	Austrian, ..	Miner, ...	63	M.	1	...	Greenough, ...		Fatally injured by fall of slate while dressing off a shot at face of breast.
28	Alex Kedabock, ...	Polish, ...	Miner, ...	23	M.	1	...	Pennsylvania, ...	Northumberland,	Fatally injured. In some unknown manner a stick of dynamite exploded in his hand.
June 6	Joseph Longherty, ...	Irish, ...	Bottomman	26	S.	...	...	Locust Gap, ...		Killed by falling under cars. He was riding up the slope on the front of the car. The rope caught a pulley and dislodged it. The pulley caught under the car and threw the car off the track and on heavily fell under cars.
12	Walley Polarski, ...	Polish, ...	Miner, ...	49	M.	1	4	Alaska, ...		Instantly killed by fall of slate. He neglected to timber his working place, and while drilling a hole at face of breast a piece of slate fell on him.
24	Charles Frymoyer, ...	American, ...	Miner, ...	29	M.	1	3	Alaska, ...		Fatally injured by fall of slate. He was picking at face of gangway when a piece of slate that he had been trying to pull down fell on him. Died in hospital June 26.



July 1	John Coniff, ..... Joseph Zariski, .....	American, .. Polish, .....	Miner, .... 28 Miner, .... 35	M. .... 1 M. .... 1	1 8	Locust Spring, ...	<p>Killed by explosion of powder. They had taken a box of powder up to the top heading in breast. One of the men took the old wick out of his lamp and was jutting in new wick. He put the old wick, ablaze, on the box of powder, which set fire to the box and exploded the powder.</p> <p>Killed by falling into shaft. He descended the shaft on south cage and got off at the bottom. He then lighted his lamp and walked into the north cage pit as the cage was descending.</p> <p>Fatally burned by explosion of gas. He fired a shot in a breast and blocked the downcast manway. He returned to the breast an hour afterward with a naked light on his head and ignited a body of gas that had gathered. He was severely burned and fell down the manway. Died July 13.</p> <p>Instantly killed by fall of slate. A shot discharged a prop in a chute and he neglected to reset it, and while working in the chute a piece of slate fell on him.</p> <p>Killed by being whirled around revolving shaft. He was helping to put a belt on a pulley while it was in motion. He overbalanced and fell on a revolving shaft. Outside.</p> <p>Killed by fall of slate. They were taking out an old set of timber in abandoned workings. After barring out the wedges off the top of the collar the top slate fell on them.</p> <p>Killed by being caught between trip of loaded cars and platform. He should have stood on the ditch side or on the platform.</p> <p>Killed by fall of coal while loading car at face of gangway. He worked with his father.</p> <p>Killed by falling under cars. He was on top of a loaded car throwing off coal for the locomotive. The cars started and he lost his balance and fell between them. Outside.</p>
13	Mike Bodman, .....	Slavonian, ..	Laborer, .. 65	M. .... 1	.... 1	Scott, .....	
14	Mike Kuzmack, .....	Russian, ...	Miner, .... 33	M. .... 1	.... 1	Pennsylvania, .....	
24	Victor Cavalaric, ....	Tyrolean, ..	Miner, .... 32	M. .... 1	1	Pennsylvania, .....	
Aug. 17	Edward Clannanski, ..	Polish, .....	Jig runner, 17	S. .... 1	.... 1	Alaska, .....	
Sept. 5	Frank Zernetski, ..... Stanly Sweetey, .....	Polish, .....	Miner, .... 52 Laborer, .. 25	M. .... 1 S. .... 1	4 ....	Scott, .....	
Oct. 25	Charles Savara, .....	Austrian, ..	Loader, ... 29	S. .... 1	.... 1	Natalie, .....	
Nov. 12	John Garlock, .....	Polish, .....	Laborer, .. 16	S. .... 1	.... 1	Locust Spring, ....	
Dec. 21	Ralph Deeming, .....	Italian, .....	Laborer, .. 22	S. .... 1	.... 1	Alaska, .....	

Northumberland,  
Land,

TABLE 5.—Non-fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 16	Peter Gragulla, .....	Russian, ..	Miner, .....	39	M. {	Natalie, .....	Northumberland,	(Head and body injured by explosion of blast. The shot had misfired and Gragulla was withdrawing the charge when it exploded. Leg broken by piece of top coal falling on him at face of breast. Face and hands burned by explosion of dynamite while he was thawing it in a can. Arm smashed by falling under cars. Leg broken by fall of slate at face of breast. Two ribs broken by being kicked by a mule. Internally injured by falling down man-way while running away from a shot. Leg broken by a piece of coal that fell off the rib while he was loading on a platform. Leg broken by being struck by a piece of coal from a shot in gangway. Finger taken off at first joint. He struck it with a hammer. Outside. Severely injured by fall of top slate in face of gangway. Severely injured by fall of slate at face of breast. Leg broken by fall of coal at face of breast. Injured by being caught between grabboast and frame of door on slope while trying to jump off grabboast. Severely injured by being bumped between cars. Outside.
	Sam Ferkish, .....	Russian, ..	Laborer, .....	28	S. }			
22	Charles Lacrobe, .....	Austrian, ..	Laborer, .....	22	S.	Richards, .....		
24	Jacob Petruski, .....	Polish, .....	Miner, .....	35	M.	Richards, .....		
27	Anthony Maloski, .....	Polish, .....	Driver, .....	18	S.	Pennsylvania, .....		
	William Stancavag, ..	Polish, .....	Miner, .....	46	M.	Alaska, .....		
Feb. 14	Joe Buzinski, .....	Polish, .....	Driver, .....	18	S.	Reliance, .....		
24	Joseph Wasocoski, ..	Russian, ..	Miner, .....	25	S.	Richards, .....		
March 15	Ray Kerstetter, .....	American, ..	Miner, .....	21	S.	Locust Gap, .....		
20	John Domeretski, .....	Polish, .....	Miner, .....	36	M.	Reliance, .....		
25	Henry Hovenstein, .....	American, ..	Carpenter, .....	65	M.	Scott, .....		
26	John Grash, .....	Russian, ..	Laborer, .....	23	S.	Excelsior, .....		
May 23	Anthony Sugan, .....	Polish, .....	Miner, .....	40	S.	Pennsylvania, .....		
31	John Backes, .....	German, .....	Laborer, .....	28	S.	Excelsior, .....		
June 22	Dom Murym, .....	Russian, .....	Miner, .....	57	M.	Richards, .....		
24	Coleman White, .....	Polish, .....	Driver, .....	19	S.	Natalie, .....		

June	27	John Sante, .....	Slavonian, ..	Laborer, ..	28	M.	Reliance, .....	Log broken by being struck by a piece of rock that fell from chute. Outside. Severely injured by blast. He shortened the squib and shot went off before he reached a place of safety.
		Joe Hartzell, .....	American, ..	Miner, .....	37	M.	Alaska, .....	Log broken by a piece of slate falling on him in heading. While being hoisted up a shaft he put his foot outside the cage and was caught between the cage and rib of shaft.
July	15	Anthony Sabotski, ..	Polish, .....	Miner, .....	38	M.	Pennsylvania, .....	Leg broken by falling under cars.
	24	John Donly, .....	American, ..	Driver, .....	23	M.	Alaska, .....	Knee fractured by being burned between cars at bottom of breaker shaft. Outside.
Aug.		Benjamin Young, ....	American, ..	Driver, .....	27	M.	Locust Gap, .....	Leg broken by fall of slate at face of breast.
	8	John Westski, .....	Polish, .....	Older, .....	15	M.	Enterprise, .....	Severely burned by explosion of gas. Zernick fired three shots at face of breast. He and his partner were in a heading on the downcast when gas began to escape and one of the men opened his lamp and ignited the gas. Colar bone broken by being burned by fresh cars.
	14	Charles Yongo, .....	Polish, .....	Miner, .....	31	M.	Enterprise, .....	Head injured by premature blast.
	22	Andrew Zerkuski, ....	Polish, .....	Miner, .....	27	M.	Richards, .....	Leg broken by a piece of coal falling on him at face of breast.
		Joseph Beruski, .....	Polish, .....	Miner, .....	41	M.	Richards, .....	Arm taken off at wrist by being caught between side bar of gumbout and rib of dining chute.
Sept.	21	John Kutter, .....	Russian, ..	Laborer, ..	35	M.	Greenough, .....	Internally injured by being squeezed between car and prop at face of breast.
	24	Lucas Elder, .....	Russian, ..	Miner, .....	38	M.	Greenough, .....	Collar bone broken and otherwise injured by being struck by steam shovel. He ran in front of shovel. Outside.
	28	Wally Sugan, .....	Russian, ..	Miner, .....	28	M.	Greenough, .....	Severely injured by blast. While tamping a charge of dynamite with an iron bar a fire of slagway toe charge exploded.
Oct.	7	Patrick Doyle, .....	Irish, .....	Fire boss, .....	48	M.	Richards, .....	Skull fractured. He was riding up the slope from the fifth level and at the fourth level his head struck the swing log gate.
	11	John Shunko, .....	Slavonian, ..	Driver, .....	19	M.	Greenough, .....	
Nov.	20	August Woreddlek, ....	Greek, .....	Laborer, ..	19	M.	Enterprise, .....	
	12	Jake Kibbuskie, .....	Russian, ..	Miner, .....	36	M.	Enterprise, .....	
Dec.	27	John Posler, .....	Polish, .....	Laborer, ..	54	M.	Pennsylvania, .....	

Northumberland.

## CONDITION OF COLLIERIES

## PHILADELPHIA AND READING COAL AND IRON COMPANY

Locust Spring Colliery.—Locust Spring Shaft, No. 1 Slope, West Slope.—Ventilation, drainage and condition as to safety, good.

Locust Gap Colliery: East Slope, West Slope, Buck Mountain Slope.—Ventilation, drainage and condition as to safety, good.

Alaska and Reliance Collieries.—Ventilation, drainage and condition as to safety, good.

## MINERAL RAILROAD AND MINING COMPANY

Pennsylvania Colliery: Nos. 1 and 5 Slopes.—Ventilation, drainage and condition as to safety, good.

Richards Colliery: Nos. 1, 4 and 5 Slopes.—Ventilation, drainage and condition as to safety, good.

Scott Colliery.—Ventilation, drainage and condition as to safety, good.

## COLONIAL COLLIERIES COMPANY

Natalie Colliery: No. 1 Slope.—Ventilation, drainage and condition as to safety, fairly good.

Nos. 2 and 3 Slopes.—Ventilation and drainage fair; condition as to safety, good.

No. 4.—Ventilation, drainage and condition as to safety, good.

## GREENOUGH RED ASH COAL COMPANY

Greenough Colliery.—Ventilation, drainage and condition as to safety, good.

## ENTERPRISE COAL COMPANY

Enterprise Colliery: Enterprise Shaft.—Ventilation, drainage and condition as to safety, fair.

No. 3 Slope.—General condition, fairly good.

## EXCELSIOR COAL COMPANY

Excelsior Colliery.—General condition, fair.

## IMPROVEMENTS

## MINERAL RAILROAD AND MINING COMPANY

Pennsylvania Colliery.—Inside: Three electric locomotives were installed for the haulage of coal, two in No. 2 Slope and one in No. 5 Slope. A tunnel was driven from No. 11 vein north dip, to No. 11 vein south dip, a distance of 200 feet; height of tunnel 7 feet off rail and 10 feet wide.



Outside: Erected a new exhaust fan 21 feet in diameter, with blades 6 feet 6 inches by 6 feet 3 inches, capable of producing 175,000 cubic feet of air, with a 1.5 inch water gauge, running 115 revolutions per minute. Installed a 16 by 30 inch engine to operate fan. Fan casing and engine house built of concrete block. This fan will replace No. 4 fan, which was a 16 foot exhaust fan of wooden structure.

Installed a new generator of 150 K. W., 300 volts, driven by side crank engine 19 by 20 inches, which at present is furnishing power for 3 mine locomotives. Power house is 18 by 20 feet, built of concrete block.

A new supply store house, 72 by 19 feet, was built of iron with concrete floor.

A new frame building, 45 by 18 feet, was erected for blacksmith and carpenter shop.

A wash house, 51 feet 7 inches by 25 feet 4 inches by 17 feet, was built of concrete block with slate roof, and is equipped with lockers, tubs, showers, hand basins and heaters.

Richards Colliery—Richards No. 1.—Inside: A slope single track, 12 feet wide and 8 feet off rail is being sunk in No. 9 vein north dip in the western section of the present No. 2 slope; distance sunk 125 feet. When finished it will be 600 feet or more.

Outside: A locomotive house, 98 by 19 feet, to house 4 locomotives, single track, was built of concrete block. A lamp house, coal house and sand house were built in with locomotive house.

Installed a new 4 foot swing saw, driven by a 12 by 24 inch engine, to saw prop timber for mines.

Built a fireproof supply house, 72 feet by 19 feet 6 inches, and two retaining walls of reinforced concrete.

Richards No. 4 Slope.—Inside: A slope in No. 6 vein basin in No. 4 slope, 12 feet wide and 7 feet off rail, is being sunk and is at present down 320 feet. It is a single track and when finished will be 600 to 800 feet deep.

Scott Colliery.—Inside: A tunnel was driven from No. 9½ vein south dip to No. 4 vein south dip, a distance of 459 feet, on the short hoist level.

Also made a traveling way from No. 9½ vein counter south dip to surface, a distance of 434 feet.

### MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held at Pottsville, April 1 and 2. The Board of Examiners was composed of the following persons: Benjamin I. Evans, Inspector; Andrew Robertson, Superintendent, Pottsville; James Bateman, Miner, Mount Carmel; James D. McHugh, Miner, Locust Gap.

The following persons passed a satisfactory examination and were granted certificates:

### ASSISTANT MINE FOREMEN

Joseph F. Hines, Shamokin; John J. Glessner, Centralia; Robert Nutter, Locust Gap; Edward J. M. Diehl, Charles H. Noll, Benjamin Williams, Frank Halem, Benjamin Roadamel, Mount Carmel.





## SIXTEENTH DISTRICT

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NORTHUMBERLAND COUNTY

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Shamokin, Pa., March 6, 1913.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor to transmit herewith the Annual Report of the Inspector of Mines of the Sixteenth Anthracite District, for the year ending December 31, 1912.

Respectfully submitted,

P. J. FRIEL, Inspector.

## SUMMARY OF STATISTICS

Number of collieries, .....	14
Number of mines, .....	45
Number of mines in operation, .....	45
Number of tons of coal shipped to market, .....	2,398,873
Number of tons used at mines for steam and heat, .....	320,702
Number of tons sold to local trade and used by employes, .....	71,665
Number of tons produced, .....	2,791,240
Number of tons produced by compressed air machines ...	.....
Number of tons produced by electrical machines, .....	.....
Number of persons employed inside of mines, .....	5,130
Number of persons employed outside, .....	2,163
Number of fatal accidents inside of mines, .....	15
Number of fatal accidents outside, .....	4
Number of non-fatal accidents inside of mines, .....	51
Number of non-fatal accidents outside, .....	10
Number of tons of coal produced per fatal accident inside, .....	186,083
Number of tons produced per fatal accident outside, .....	697,810
Number of tons produced per fatal accident inside and outside, .....	146,907
Number of persons employed per fatal accident inside,...	342
Number of persons employed per fatal accident outside, ..	541
Number of persons employed per fatal accident inside and outside, .....	384
Number of persons employed per non-fatal accident inside, .....	101
Number of persons employed per non-fatal accident outside, .....	216
Number of persons employed per non-fatal accident inside and outside, .....	120
Number of wives made widows, .....	8
Number of children made orphans, .....	29
Number of steam locomotives used inside of mines, .....	2
Number of steam locomotives used outside, .....	20
Number of compressed air locomotives used inside, .....	.....
Number of compressed air locomotives used outside, ....	.....
Number of electric motors used inside, .....	10
Number of electric motors used outside, .....	2
Number of fans in use, .....	43
Number of furnaces in use, .....	.....
Number of gaseous mines in operation, .....	19
Number of non-gaseous mines in operation, .....	26
Number of new mines opened, .....	.....
Number of old mines abandoned, .....	.....

## TABLE A

## PRODUCTION OF COAL

Names of Operators	Tons
Philadelphia and Reading Coal and Iron Company, . . . . .	1,367,081
Mineral Railroad and Mining Company, . . . . .	831,935
Excelsior Coal Company, . . . . .	177,746
Shipman Coal Company, . . . . .	171,452
Trevorton Colliery Company, . . . . .	151,888
Buck Ridge Coal Mining Company, . . . . .	88,138
Total, . . . . .	2,791,240

## Production by Counties

Northumberland, . . . . .	2,791,240
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TABLE B—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employees inside	Number of employees outside	Total number of employees	Number of employees inside per fatal accident	Number of employees outside per fatal accident	Number of employees inside per non-fatal accident	Number of employees outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Philadelphia and Reading Coal and Iron Co., .....	5	1	6	23	1	23	273,156	62,140	2,478	988	3,466	496	988	113	988
Munciel Railroad and Mining Co., .....	4	2	6	17	7	24	208,354	49,111	1,497	752	2,249	374	376	88	376
Excelsior Coal Co., .....	3	1	3	3	1	4	88,873	30,249	406	43	449	203	93	125	107
Shipman Coal Co., .....	1	.....	1	.....	.....	5	171,452	31,290	259	153	412	259	.....	52	43
Trevorton Colliery Co., .....	.....	.....	.....	.....	.....	1	.....	171,888	270	80	350	.....	.....	270	.....
Buck Ridge Coal Mining Co., .....	3	.....	3	3	1	4	29,379	29,379	229	97	317	73	.....	73	97
Totals and averages for district, ...	15	4	19	51	10	61	186,082	54,759	5,130	2,163	7,293	312	541	101	216



TABLE C.—Classification of Fatal Accidents Inside and Outside of Mines

	Months												Totals	Percentages
	January	February	March	April	May	June	July	August	September	October	November	December		
Causes of Accidents Inside														
Falls of coal, .....	1	1	...	...	...	...	...	1	...	...	...	1	4	26.67
Falls of slate, .....	...	1	...	...	...	...	...	1	1	1	...	1	5	33.33
Mine cars, .....	...	...	...	...	...	...	1	...	...	2	...	...	3	20.00
Blasts, premature and otherwise, .....	...	...	1	...	...	...	...	...	...	...	...	...	1	6.67
Rush of gob, .....	...	...	...	...	...	...	2	...	...	...	...	...	2	13.33
Totals, .....	1	2	1	...	...	...	3	2	1	3	...	2	15	100.00
Causes of Accidents Outside														
Cars, .....	...	...	...	...	...	...	...	...	1	...	...	...	1	25.00
Suffocation in chutes, etc., .....	...	...	...	...	...	...	...	...	...	...	...	1	1	25.00
Rush of culm, .....	...	...	...	...	...	...	...	1	...	...	...	...	1	25.00
Falling off building, ..	...	...	...	...	...	...	...	...	...	...	1	...	1	25.00
Totals, .....	...	...	...	...	...	...	...	1	1	...	1	1	4	100.00
Grand totals inside and outside, .....	1	2	1	...	...	...	3	3	2	3	1	3	19	.....

TABLE D.—Classification of Non-Fatal Accidents Inside and Outside of Mines

	Months												Totals	Percentages
	January	February	March	April	May	June	July	August	September	October	November	December		
Causes of Accidents Inside														
Falls of coal, .....	2	2	...	...	...	1	2	1	...	...	...	...	8	15.69
Falls of slate, .....	1	1	1	...	...	...	...	1	...	1	3	...	8	15.69
Falls of roof, .....	...	...	...	...	...	...	...	...	...	...	...	...	1	1.96
Mine cars, .....	1	1	1	...	...	...	...	...	3	...	1	...	9	17.65
Explosions of gas, .....	6	...	...	...	...	...	...	...	1	2	...	...	14	27.45
Explosions of powder and dynamite, .....	2	...	...	1	...	...	...	...	...	...	...	...	3	5.88
Blasts, premature and otherwise, .....	...	...	1	...	...	...	1	...	...	...	...	1	3	5.88
Falling into slopes, etc., .....	...	...	1	...	...	...	...	...	...	...	...	...	1	1.96
Struck by piece of slate, .....	...	...	1	...	...	...	...	...	...	...	...	...	1	1.96
Struck by rope, .....	...	...	...	...	...	...	1	...	...	...	...	...	1	1.96
Struck by timber, .....	...	...	...	...	...	1	...	...	...	...	...	...	1	1.96
Struck by hammer, ...	...	...	...	...	...	...	...	...	...	...	...	1	1	1.96
Totals, .....	12	4	6	...	2	7	5	1	5	5	1	3	51	100.00
Causes of Accidents Outside														
Cars, .....	...	...	...	...	1	...	1	2	...	...	...	...	4	40.00
Machinery, .....	1	1	1	...	...	1	...	...	...	...	...	1	5	50.00
By falling, .....	...	...	...	...	...	...	1	...	...	...	...	...	1	10.00
Totals, .....	1	1	1	...	1	1	2	2	...	...	...	1	10	100.00
Grand totals inside and outside, .....	13	5	7	...	3	8	7	3	5	5	1	4	61	.....

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Miners, .....	1	1	1	.....	.....	.....	.....	2	1	2	.....	1	9
Miners' laborers, .....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	1	3
Drivers and runners, .....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
Repairmen, .....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	2
Totals, .....	1	2	1	.....	.....	.....	3	2	1	3	.....	2	15
Outside													
Engineers and firemen, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1
Bottommen, .....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
Laborers, .....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1	.....	2
Totals, .....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	1	1	4
Grand totals inside and outside, .....	1	2	1	.....	.....	.....	3	3	2	3	1	3	19

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Miners, .....	10	2	2	.....	2	4	2	1	3	4	.....	3	34
Miners' laborers, .....	1	1	.....	.....	.....	1	2	.....	1	1	.....	.....	8
Drivers and runners, .....	1	1	.....	.....	.....	1	.....	.....	.....	.....	1	.....	6
Loaders, .....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Bottommen, .....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1
Switchmen, .....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
Totals, .....	12	4	6	.....	2	7	5	1	5	5	1	3	51
Outside													
Foremen, .....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Blacksmiths and carpenters, .....	.....	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	2
Engineers and firemen, .....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1
Chute tenders, .....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Loaders, .....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1
Drivers, .....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1
Spraggers, .....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	2
Jig runners, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Totals, .....	1	1	1	.....	1	1	2	2	.....	.....	.....	1	10
Grand totals inside and outside, .....	13	5	7	.....	3	8	7	3	5	5	1	4	61

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	December
Totals												
American, .....	....	....	....	....	....	....	2	3	1	1	1	2
Welsh, .....	....	....	....	....	....	....	....	....	1	....	....	1
Polish, .....	1	....	1	....	....	....	1	....	....	2	....	5
Italian, .....	....	1	....	....	....	....	....	....	....	....	....	1
Russian, .....	....	1	....	....	....	....	....	....	....	....	....	1
Totals, .....	1	2	1	....	....	....	3	3	2	3	1	3

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	December
Totals												
American, .....	3	4	5	....	1	3	2	3	2	1	1	....
English, .....	1	....	....	....	....	1	1	....	....	....	....	2
Welsh, .....	....	....	....	....	....	1	....	....	....	....	....	1
Irish, .....	....	....	1	....	....	....	....	....	....	1	....	1
German, .....	....	....	....	....	....	....	....	....	....	....	....	1
Polish, .....	4	1	1	....	....	4	5	....	2	2	....	3
Italian, .....	....	....	....	....	....	....	....	....	....	....	....	2
Slavonian, .....	....	....	....	....	....	....	....	....	....	....	....	1
Austrian, .....	2	....	....	....	2	....	....	....	....	....	....	4
Russian, .....	3	....	....	....	....	....	....	....	1	1	....	5
Totals, .....	13	5	7	....	3	8	7	3	5	5	1	4

TABLE I. Operators and mines, kind of openings, type and size of fans, size of furnaces, volume of air produced by fan or furnace per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	Kind of opening	Gaseous or non-gaseous	Method of ventilation	Diameter of fan in feet and inches	Width of blades in feet and inches	Depth of blades in feet and inches	Number of revolutions per minute	Water gauge developed—in inches	Name of fan	Power used	Number of splits of air currents	Number of cubic feet of air per minute entering the mine at inlet	Total number of cubic feet of air per minute circulating in all the splits	Number of cubic feet of air per minute passing out at all outlets	Number of persons employed inside
Philadelphia and Reading Coal and Iron Co.															
North Franklin Colliery:															
North Franklin No. 1	Drift	Non-gas.	Fan	18	6	5.4	70	0.7	Guibal	Electricity	8	79,000	60,000	80,500	433
North Franklin No. 2	Slope	Non-gas.	Fan	18	6	5.5	80	2.1		Steam	6	71,000	53,000	73,000	
North Franklin No. 3	Slope	Gaseous	Fan	15	5.1	4.5	50	1.0		Electricity	5	57,000	36,000	58,000	
Bear Valley Colliery:															
Bear Valley No. 1	Shaft	Gaseous	Fan	18	5.9	4.9	95	2.1	Guibal	Steam	7	46,000	43,000	47,000	473
Bear Valley No. 2	Shaft	Non-gas.	Fan	12	4	3.6	50	0.5			3	27,000	25,000	28,000	
Bear Valley No. 3	Drift	Non-gas.	Fan	15	4	5	90	0.6			3	39,000	37,000	40,000	
Burnside Colliery:															
Burnside No. 1	Drift	Non-gas.	Fan	15	4.2	5.6	90	1	Guibal	Steam	4	41,000	37,000	42,000	512
Burnside No. 2	Shaft	Gaseous	Fans	{ 15 15 15	{ 4 4 4	{ 5 5 5	{ 90 90 90	{ 1.1 1.1 1.2			{ 6 4 4	{ 41,000 37,000 41,500	{ 42,000 42,000 36,000	{ 43,000 43,000 43,000	
Stirling Colliery:															
Stirling No. 1	Slope	Gaseous	Fans	{ 18 21 21	{ 6 7.5 4.6	{ 5.4 6 4.3	{ 80 65 80	{ 1.3 1.4 1.3	Guibal	Steam	8	33,000	32,000	34,000	359
Henry Clay Colliery:															
Henry Clay No. 1	Shaft	Gaseous	Fans	{ 21 15 15	{ 7 4 4	{ 6.3 5 5	{ 70 120 120	{ 1.4 1.2 1.2	Guibal	Steam	7	52,000	49,000	53,000	414
Pig Mountain Colliery:															
Pig Mountain No. 1	Drift	Non-gas.	Fan	12	4	3.6	120	1.5	Guibal	Steam	3	24,000	21,000	24,000	310
Pig Mountain No. 2	Slope	Gaseous	Fan	18	6	5.5	75	0.8			4	50,000	47,000	51,000	
Pig Mountain No. 3	Slope	Gaseous	Fan	18	6	5.5	70	1.2			4	32,000	28,000	33,000	

Mineral Railroad and Mining Co.									
Cameron Colliery:									
Cameron No. 1	Drift	Non-gas.	Fan	20	6.10	6.2	40	0.4	39,800
Cameron No. 2	Drift	Non-gas.	Fan	18	6.	5.2	72	1.4	47,100
Cameron No. 3	Drift	Non-gas.	Fan	18	6.	5.7	75	1.4	51,800
Cameron No. 4	Drift	Non-gas.	Fan	18	7.	5.6	100	2.7	40,100
Cameron No. 5	Slope	Gasous	Fan	18	6.	5.2	85	1.6	71,000
Cameron No. 6	Slope	Gasous	Fan	16	6.	5.3	96	2.4	80,000
									38,000
									53,000
Lake Fidler Colliery:									
Lake Fidler No. 1	Shaft	Gasous	Fan	18	7.	5	84	2.4	59,764
Lake Fidler No. 2	Shaft	Gasous	Fans	18	7.	5.2	106	1.6	86,700
Lake Fidler No. 3	Drift	Non-gas.	Fan	16	6.	5.	103	2.0	51,600
				10	4.4	2.	70	0.2	58,200
									13,600
									11,200
Hickory Ridge Colliery:									
Hickory Ridge No. 1	Slope	Gasous	Fan	18	7.	5.6	70	0.8	60,000
Hickory Ridge No. 2	Drift	Non-gas.	Fan	15	4.9	4.7	90	0.7	52,000
									60,000
Hickory Swamp Colliery:									
Hickory Swamp No. 1	Slope	Gasous	Fans	16	5.5	4.5	80	1.2	50,000
				14	3.6	4.1	99	1.	47,200
									22,000
Excelsior Coal Co.									
Corbin Colliery:	Drifts	Non-gas.	Fan	10	3.	3.6	100	1.4	23,000
Corbin No. 1									
Corbin No. 2	Slope	Gasous	Fan	12	5.	5.	90	2.1	25,000
Corbin No. 3	Slope	Gasous	Fan	10	3.	3.6	90	1.5	23,000
Corbin No. 4	Drift	Non-gas.	Fan	12	5.	5.	90	2.2	24,000
Corbin No. 5	Slope	Gasous	Fan						
Corbin No. 6	Slope	Gasous	Fan						
Shipman Coal Co.									
Colbert Colliery:	Shaft	Gasous	Fan	16	5.	4.	90	0.8	52,000
Colbert No. 1	Drift	Non-gas.	Fan	16	5.	4.	75	0.5	35,000
									22,000
Trevorton Colliery Co.									
Katherine Colliery:	Drift	Non-gas.	Fan	7	3.	2.5	375	0.8	27,000
Katherine No. 1	Drift	Non-gas.	Fan						
Katherine No. 2	Drift	Non-gas.	Fan	7	3.	2.5	375	0.8	27,000
Katherine No. 3	Drift	Non-gas.	Fan						
Buck Ridge Coal Mining Co.									
Buck Ridge Colliery:	Slope	Gasous	Fans	14	4.6	4.6	92	1.	30,000
Buck Ridge No. 1	Slope	Non-gas.	Fan	18	5.	5.6	45	0.9	29,000
Buck Ridge No. 2	Slope	Non-gas.	Fan	6	2.5	2.	100	0.6	24,000
Buck Ridge No. 3	Slope	Non-gas.	Fan	6	2.5	2.	100	0.6	9,000
									8,200
									31,000
									26,000
									10,000
									9,600

Note.—No report made of air measurements of six non-gaseous mines ventilated by natural means.









TABLE 2.—Part 2

Names of Operators	County	Number of Boilers					Locomotives			Total horse power	Number of steam engines of all classes	Total horse power	Number of pumps delivering water to surface	Capacity in gallons per minute	Quantity delivered to surface per minute—gallons	Number of electric dynamos	Number of air compressors
		Cylindrical	Horse power	Tubular	Horse power	Total horse power	Steam	Air	Electric								
Philadelphia and Reading Coal and Iron Co.,	Northumberland,	.....	.....	64	8,000	8,000	6	.....	9	146	17,555	20	23,166	8,729	4	4	5
Mineral Railroad and Mining Co.,		16	512	52	7,012	7,012	10	.....	3	84	8,581	15	10,490	4,311	3	.....	.....
Excelsior Coal Co.,		.....	.....	2	150	662	1	.....	.....	8	370	2	468	300	.....	.....	.....
Shipman Coal Co.,		.....	.....	10	1,275	1,275	1	.....	.....	20	1,078	.....	2,100	1,050	.....	.....	1
Trevorton Colliery Co.,		.....	.....	3	900	900	2	.....	.....	.....	242	.....	.....	.....	.....	.....	1
Buck Ridge Coal Mining Co.,		.....	.....	9	1,430	1,430	2	.....	.....	.....	707	.....	4	1,000	915	.....	2
Totals,	.....	16	512	140	18,767	19,279	22	.....	12	283	38,423	43	42,824	15,326	7	.....	13

TABLE 3.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside										Outside										Grand total inside and outside	
		Mine foremen	Assistant mine foremen	Fire bosses and assistants	Miners	Miners' laborers	Drivers and runners	Doorboys and helpers	Pumpmen	Company men	All other employes	Total inside	Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Slatepickers (boys)	Slatepickers (men)	Bookkeepers and clerks	All other employes	Total outside		
Philadelphia and Reading Coal and Iron Co.,	Northumberland,	7	33	....	996	485	160	27	13	300	457	2,478	..	8	34	122	107	49	19	649	988	3,466	
Mineral Railroad and Mining Co.,		4	10	39	678	190	112	22	18	54	419	1,497	..	5	46	110	205	14	27	345	752	2,249	
Excelsior Coal Co.,		1	3	3	297	86	34	...	9	47	23	406	1	1	5	17	10	18	...	41	493	1,499	
Shipman Coal Co.,		1	1	5	108	41	19	3	5	70	6	259	1	1	8	17	43	30	3	50	153	412	
Trevorton Colliery Co.,		1	...	3	190	27	14	3	...	10	112	270	1	1	8	8	10	5	1	51	80	350	
Beck Ridge Coal Mining Co.,		1	...	3	100	53	14	1	6	42	.....	220	1	1	6	15	20	4	2	48	97	317	
Totals,		15	47	44	2,149	882	353	56	44	523	1,017	5,130	4	17	102	289	395	120	52	1,184	2,163	7,293	





TABLE 4.—Fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 16	Stiney Surovitz, .....	Polish, .....	Miner, .....	40	S.	....	....	North Franklin, ..		Instantly killed by fall of coal at working face while robbing pillars.
Feb. 12	Joseph Studinskie, ..	Russian, ....	Laborer, ....	18	S.	....	....	Corbin, .....		Compound fracture of pelvis and laceration of intestines, by fall of slate at face of breast. Died May 12.
28	Anthony Neala, .....	Italian, .....	Miner, .....	33	S.	....	....	Hickory Ridge, ..		Instantly killed by fall of coal at face of breast.
March 2	Joseph Ashuskie, ...	Polish, .....	Miner, .....	30	S.	....	....	Big Mountain, ...		Skull fractured by a premature blast. Died same day.
July 11	William Way, .....	American, ...	Repairman, ...	40	M.	1	6	Burnside, .....		{ Suffocated by rush of gas in the manway of breast. Their bodies were recovered July 14.
15	Harry Derrick, .....	American, ...	Repairman, ...	22	S.	....	....	Burnside, .....		{
	Joseph Lepinskie, ....	Polish, .....	Driver, .....	18	S.	....	....	Colbert, .....		Instantly killed while he was uncoupling cars that were in motion in the dish at bottom of slope.
Aug. 2	George Seriff, .....	American, ...	Laborer, .....	19	S.	....	....	Cameron, .....	North-herland.	Suffocated by rush of culm from the bank. Outside.
7	Bert M. Koble, .....	American, ...	Miner, .....	38	M.	1	5	Buck Ridge, ....		Killed by fall of coal while timbering chute.
28	William Shaw, .....	American, ...	Miner, .....	47	M.	1	3	Buck Ridge, ....		Killed by fall of slate at face of breast.
12	George Reese, .....	Walsh, .....	Bottomman, ..	30	S.	....	....	Corbin, .....		Instantly killed between mine cars at foot of plane while uncoupling them while they were in motion. Outside.
	Morris Starr, .....	American, ...	Miner, .....	45	M.	1	3	Hickory Ridge, ...		Instantly killed by fall of slate at working face while removing pillars.
	Hugh McDonald, .....	American, ...	Miner, .....	19	S.	....	....	Cameron, .....		Fatally injured by being caught between mine cars and high side of gangway. Died same day.
Oct. 21	Martin Slernovitz, ...	Polish, .....	Miner, .....	27	M.	1	1	Corbin, .....		Killed by fall of slate at face of breast.
26	Alex Koslinski, ....	Polish, .....	Laborer, .....	21	S.	....	....	Buck Ridge, ....		Instantly killed by mine cars. While running two cars down dip gangway the coupling broke and the cars struck him.
Nov. 16	John Bickert, .....	American, ...	Laborer, .....	62	M.	1	3	Henry Clay, ...		Internally injured while raising an ambulance shed. Outside. Died November 19.



TABLE 5.—Non-fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 8	{ Anth. Rogavage, ...	{ Polish, ...	{ Miner, ...	34	M.	{ Henry Clay, ... Luke Fidler, ...		{ Face and hands burned. Face and hands lacerated. Head lacerated and compound fracture of leg. These men were injured by an explosion of gas in manway below face of breast. Collar bone fractured by being caught between the high side of gangway and mine car. He slipped while jumping into car. Head and body lacerated. Head and body lacerated and leg fractured. These men were injured by an explosion of dynamite, caused by thawing dynamite with an open light. Head, hands and body burned. Head lacerated and hands burned. These men were injured by explosion of gas in heading near working face. Gas was ignited by an open light. Hips bruised by fall of slate at face of work while removing pillars. Compound fracture of arm. His clothing was caught by a revolving shaft while he was repairing machinery that was in motion. Outside. Shoulder blade fractured by fall of coal at face of breast. Jaw broken by fall of coal at face of working place while removing pillars. Right hip dislocated by fall of slate at face of breast.
	{ Anth. Vadax, ...	{ Polish, ...	{ Miner, ...	26	M.			
	{ Mike Drusk, ...	{ Polish, ...	{ Miner, ...	32	M.			
	{ Joseph Novack, ...	{ Polish, ...	{ Miner, ...	25	M.			
	{ John Dubluskie, ...	{ American, ...	{ Driver, ...	18	S.			
20	{ Mike Carpiac, ...	{ Russian, ...	{ Miner, ...	49	M.	{ North Franklin, ... North Franklin, ...		
	{ Sam Vetovich, ...	{ Russian, ...	{ Laborer, ...	20	S.			
23	{ George Oferwis, ...	{ Austrian, ...	{ Miner, ...	33	M.	{ Cameron, ... Cameron, ...	Northumberland,	
	{ John Krojposkie, ...	{ Austrian, ...	{ Miner, ...	25	S.			
25	Anth. Carleskie, ...	Russian, ...	Miner, ...	42	M.	Hickory Ridge, ...		
25	William Hartzell, ...	American, ...	Foreman, ...	30	M.	Corbin, ...		
27	Peter L. Metz, ...	American, ...	Miner, ...	51	M.	Corbin, ...		
29	A. R. Smith, ...	English, ...	Miner, ...	48	M.	Corbin, ...		
Feb. 9	John Gillespie, ...	American, ...	Miner, ...	50	M.	Colbert, ...		

Feb.	10	Joseph Zabloskie, ...	American, ...	Driver, ...	17	S.	Cameron, .....	Skull fractured by car. He was fixing his seat on front end of car while it was in motion, when his head struck the roof of gangway.
	12	Jacob Weise, .....	American, ...	Miner, .....	24	M.	Hickory Swamp, .....	Right hip dislocated by a piece of coal falling on him from high side of gangway while sinking a prop hole.
	13	Russel Albright, ...	American, ...	Chute-tender, ...	15	S.	Hickory Ridge, .....	Hand crushed by machinery in breaker. Outside.
	21	Joseph Kavitus, .....	Polish, .....	Laborer, .....	23	S.	Hickory Swamp, .....	Leg fractured by fall of coal from low side of gangway.
March	5	Michl. McIntyre, ...	American, ...	Miner, .....	34	M.	Colbert, .....	Leg fractured by falling down breast.
	6	Charles Hummel, ...	American, ...	Miner, .....	35	M.	Katherine, .....	Face lacerated by a delayed shot at working face.
	12	William Higgins, ...	Irish, .....	Driver, .....	18	S.	Big Mountain, .....	Face and hands burned by explosion of powder on gangway.
	14	Frank Slovenskie, ...	Polish, .....	Miner, .....	45	M.	Burnside, .....	Shoulder bruised and head lacerated by being knocked down manway by fall of coal.
	21	John Essler, .....	American, ...	Carpenter, .....	21	S.	Hickory Ridge, .....	Finger cut off by circular saw. Outside.
	28	Alex Jaskotic, .....	American, ...	Driver, .....	19	S.	Luke Fidler, .....	Injured by being squeezed between door frame and mine car on gangway.
	30	James Little, .....	American, ...	Loader, .....	28	S.	Burnside, .....	Leg fractured by being struck by a piece of slate that fell down chute while he was loading mine car.
May	27	Charles Wolf, .....	American, ...	Loader, .....	17	S.	Burnside, .....	Compound fracture of forearm by being struck by brake on car. Outside.
		(Charles Stanker, ...)	Austrian, ...	Miner, .....	52	M.	{ Cameron, .....	{ Face burned.
		(John Martin, ...)	Austrian, ...	Miner, .....	32	M.	{ Hickory Ridge, .....	{ Face and body burned by gas on gangway.
June	9	Harry Artley, .....	American, ...	Engineer, .....	37	M.	{ Burnside, .....	{ Collar bone fractured by machinery. Outside.
	10	William Thomas, ...	Wels', .....	Bottomman, ...	28	S.	{	{ Arm fractured and head lacerated by being struck by plank on slope.
		(William Dredelbiss, ...)	American, ...	Miner, .....	43	M.	{ Buck Ridge, .....	{ Face, hands and body burned by explosion of gas near face of breast.
		(Sam Gonesoskie, ...)	Polish, .....	Laborer, .....	36	S.	{ Burnside, .....	{ Ignited by an open light.
		(Joseph Poploskie, ...)	Polish, .....	Miner, .....	35	M.	{	{ Leg fractured by fall of coal at face of chute.
	22	John Sheldiff, .....	Polish, .....	Miner, .....	25	M.	{	{
	25	Joseph Krabat, .....	American, ...	Miner, .....	29	M.	{ North Franklin, .....	{ Fingers crushed between side books on mine car and tail chain, at top of slope.
	26	Joc Sparrow, .....	Polish, .....	Driver, .....	18	S.	{ North Franklin, .....	{ Feet crushed by mine car passing over them on gangway. One foot had to be amputated.
July	3	Joseph Mellon, .....	Italian, .....	Miner, .....	24	S.	{ North Franklin, .....	{ Head and body lacerated by falling coal following him down the manway.
	17	William Pearce, ...	English, ...	Carpenter, .....	36	M.	{ Hickory Ridge, .....	{ Arm broken by falling in breaker. Outside.
		Tony Skujick, .....	Italian, ...	Laborer, .....	23	S.	{ North Franklin, .....	{ Left eye injured by flying coal from a blast near face of gangway.
	29	Wesley Horner, .....	American, ...	Spragget, .....	15	S.	{ Cameron, .....	{ Knee dislocated and limbs and face bruised by mine cars. Outside.
		Thomas Brennan, ...	American, ...	Miner, .....	35	S.	{ Colbert, .....	{ Jaw fractured and face and head lacerated by fall of coal at face of breast.
		William Waetskie, ..	Polish, .....	Laborer, .....	24	S.	{ Stirling, .....	{ Leg fractured by being caught between rope and prop at bottom of slope.
	30	William Buschekonis, ...	Polish, .....	Laborer, .....	25	S.	{ Luke Fidler, .....	{ Arm fractured by fall of top rock.

Northumberland.



TABLE 5—Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Aug. 5	Stephen Sigfried, ....	American, ..	Driver, .....	17	S.	Cameron, .....	Northumberland.	Forearm fractured by mine cars. Outside.
6	Fred Weaver, .....	American, ..	Miner, .....	45	S.	Colbert, .....		Ankle fractured by fall of coal in man way while starting a heading.
23	George Evans, .....	American, ..	Sprigger, .....	15	S.	Hickory Ridge, .....		Hands and face while trying to couple mine cars while they were in motion. Outside.
Sept. 4	William Stasney, ....	Polish, .....	Miner, .....	37	M.	Henry Clay, .....		Burned by gas near face of breast.
11	Steve Kreplock, .....	Polish, .....	Laborer, .....	17	S.	Luke Fuller, .....		Knee fractured while coupling mine bog-gies in gangway while they were in motion.
13	Joseph Iorsett, .....	American, ..	Miner, .....	49	M.	Hickory Ridge, .....		Leg fractured by fall of slate at working face while removing pillars.
18	George Koons, .....	American, ..	Miner, .....	38	M.	North Franklin, .....		Leg badly bruised between mine cars at car hoist.
25	Joseph Kowalskie, ...	Russian, ....	Switchman, ....	42	M.	Hickory Ridge, .....		Teeth fractured by mine cars at foot of plane.
Oct. 4	Joseph Kozar, .....	Russian, ....	Miner, .....	32	M.	Corbin, .....		Pelvis fractured by fall of slate at face while removing pillars.
18	Frank Eckman, .....	American, ..	Miner, .....	40	M.	North Franklin, .....		Leg fractured by fall of slate at face of gangway.
	August Lubnow, .....	German, ....	Miner, .....	46	M.	Colbert, .....		Arm fractured and compound fracture of collar bone by fall of slate at face of gangway.
25	Stiney Mattis, .....	Polish, .....	Laborer, .....	22	S.	Hickory Ridge, .....		Hands and face burned by explosion of gas at face of chute. Gas was ignited by an open light.
8	And. Palwazee, .....	Polish, .....	Miner, .....	23	S.	Hickory Swamp, .....		Hands and face burned by explosion of gas at face of breast. Gas was ignited by an open light.
Nov. 6	Ralph Perry, .....	American, ..	Driver, .....	22	S.	Cameron, .....		Leg fractured by mine cars on gangway.
Dec. 19	Joseph Kulick, .....	Polish, .....	Miner, .....	43	M.	Stirling, .....		Skull fractured by a blow from a hammer in the hands of the laborer, as they were taking down some top coal with hammer and wedge at face of gangway.

Dec.	19	Samuel Kidron, .....	Polish, .....	Miner, .....	35	M.	North Franklin, .....	Head lacerated and shoulder blade broken by blast in heading near face of breast.
	20	George Tesko, .....	Slavonian, ..	Miner, .....	29	M.	Stirling, .....	Leg broken and head lacerated by fall of top slate at face of breast.
	28	John Midmeczkie, ....	Polish, .....	Jig runner, ....	18	S.	Buck Ridge, .....	Arm and leg broken by being caught by revolving shaft in breaker. Outside.

## CONDITION OF COLLIERIES

### PHILADELPHIA AND READING COAL AND IRON COMPANY

North Franklin and Burnside Collieries.—Safety conditions and drainage, good. Ventilation, fair.

Bear Valley Colliery.—Safety conditions, good. Ventilation and drainage, fair.

Stirling, Henry Clay and Big Mountain Collieries.—Safety conditions, ventilation and drainage, good.

### MINERAL RAILROAD AND MINING COMPANY

Cameron, Luke Fidler, Hickory Ridge and Hickory Swamp Collieries.—Safety conditions, good. Ventilation and drainage, fair.

### EXCELSIOR COAL COMPANY

Corbin Colliery.—Safety conditions, good. Ventilation and drainage, fair.

### SHIPMAN COAL COMPANY

Colbert Colliery.—Safety conditions, good. Ventilation and drainage, fair.

### TREVORTON COLLIERY COMPANY

Katherine Colliery.—Safety conditions and ventilation, good. Drainage, fair.

### BUCK RIDGE COAL MINING COMPANY

Buck Ridge Colliery.—Safety conditions, good. Ventilation and drainage, fair.

## IMPROVEMENTS

### PHILADELPHIA AND READING COAL AND IRON COMPANY

North Franklin Colliery.—A tunnel was driven in the second lift of the Short slope from No. 8 vein north to No. 10 vein, a distance of 331 feet.

Bear Valley Colliery.—A locomotive track 7,900 feet long was built west of the colliery, and a boiler house and engine house erected to sink a new rock slope to work the north dip workings.

Burnside Colliery.—A tunnel was driven in the shaft second lift, from No. 8 vein to No. 7 vein, a distance of 350 feet.

Stirling Colliery.—A single track slope was sunk in No. 5 vein, fourth lift, a distance of 686 feet.

Henry Clay Colliery.—An air tunnel was driven in the shaft second lift from No. 5 vein to No. 7 vein, a distance of 102 feet.

Big Mountain Colliery.—A tunnel was driven from breast No. 17, No. 2 slant, east No. 8 vein, No. 2 slope, north to No. 9 vein, a distance of 272 feet.

## MINERAL RAILROAD AND MINING COMPANY

Cameron Colliery.—A tunnel was driven from No. 7½ vein to No. 10 vein slant, a distance of 236 feet. A cross-cut tunnel was driven from No. 7½ vein to No. 8 and No. 9 vein, a distance of 65 feet. A tunnel was driven from No. 5 vein to No. 2 vein, a distance of 726 feet; also tunnel from bottom of shaft to No. 11 vein, a distance of 130 feet. An electric haulage system was installed inside the mines. The breaker was equipped with a complete steam heating plant. A wash-house of concrete blocks, 25 by 50 feet, was erected for the accommodation of the employees.

Hickory Ridge Colliery.—A tunnel was driven from No. 5 vein to No. 8 vein, a distance of 54 feet; also a tunnel from No. 6 slope to No. 8 vein, a distance of 501 feet. A complete steam heating plant was installed in the breaker.

## TREVORTON COLLIERY COMPANY

Katherine Colliery.—A tunnel was driven from No. 3 gangway to No. 2 Lykens Valley vein, a distance of 250 feet; also a tunnel from No. 7 vein to both splits of the Buck Mountain vein, a distance of 220 feet. Installed a 7-ton Whitcomb gasoline motor inside. Installed one Maxim 300 horse power boiler at the steam plant outside.

## BUCK RIDGE COAL MINING COMPANY

Buck Ridge Colliery.—A tunnel was driven in No. 1 slope from No. 8 vein to the Buck Mountain vein, a distance of 696 feet; also a tunnel in the second lift of No. 2 slope from No. 12 vein to No. 14 vein, a distance of 313 feet.

## MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in Pottsville, April 1 and 2. The Board of Examiners was composed of the following persons: Martin McLaughlin, Mine Inspector, Shamokin; Edward Brennan, Superintendent, Shamokin; William Culton, Miner, Shamokin; Patrick Ryan, Miner, Shamokin.

The following persons passed a satisfactory examination and were granted certificates:

## MINE FOREMEN

M. F. Farrell, Hickory Swamp.

## ASSISTANT MINE FOREMEN

T. J. Langdon, James Bryson, Shamokin; William Roy Plummer, Trevorton.





## SEVENTEENTH DISTRICT

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CARBON AND SCHUYLKILL COUNTIES

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Lansford, Pa., February 28, 1913.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor of transmitting herewith my Annual Report as Inspector of Mines of the Seventeenth Anthracite District, for the year ending December 31, 1912.

Respectfully submitted,

ISAAC M. DAVIES, Inspector.

## SUMMARY OF STATISTICS

Number of collieries, .....	10
Number of mines, .....	37
Number of mines in operation, .....	37
Number of tons of coal shipped to market, .....	3,542,816
Number of tons used at mines for steam and heat, .....	471,635
Number of tons sold to local trade and used by employes, ..	177,248
Number of tons produced, .....	4,191,699
Number of tons produced by compressed air machines, ...	.....
Number of tons produced by electrical machines, .....	.....
Number of persons employed inside of mines, .....	6,510
Number of persons employed outside, .....	3,181
Number of fatal accidents inside of mines, .....	17
Number of fatal accidents outside, .....	9
Number of non-fatal accidents inside of mines, .....	29
Number of non-fatal accidents outside, .....	8
Number of tons of coal produced per fatal accident inside, ..	246,570
Number of tons produced per fatal accident outside, .....	465,744
Number of tons produced per fatal accident inside and outside, .....	161,219
Number of persons employed per fatal accident inside, ...	383
Number of persons employed per fatal accident outside, ..	353
Number of persons employed per fatal accident inside and outside, .....	373
Number of persons employed per non-fatal accident inside, ..	224
Number of persons employed per non-fatal accident out- side, .....	398
Number of persons employed per non-fatal accident inside and outside, .....	262
Number of wives made widows, .....	9
Number of children made orphans, .....	12
Number of steam locomotives used inside of mines, .....	7
Number of steam locomotives used outside, .....	41
Number of compressed air locomotives used inside, .....	2
Number of compressed air locomotives used outside, .....	.....
Number of electric motors used inside, .....	58
Number of electric motors used outside, .....	1
Number of fans in use, .....	17
Number of furnaces in use, .....	.....
Number of gaseous mines in operation, .....	18
Number of non-gaseous mines in operation, .....	19
Number of new mines opened, .....	4
Number of old mines abandoned, .....	4

TABLE A  
PRODUCTION OF COAL

Names of Operators	Tons
Lehigh Coal and Navigation Company, .....	3,673,945
Estate A. S. Van Wickle, .....	254,345
Coxe Brothers and Company, Incorporated, .....	240,815
Evans Colliery Company, .....	17,260
Moses Neyer, .....	5,334
Total, .....	4,191,699

Production by Counties	
Carbon, .....	2,539,175
Schuylkill, .....	1,652,524
Total, .....	4,191,699

TABLE B.—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employees inside	Number of employees outside	Total number of employees	Number of employees inside per fatal accident	Number of employees outside per fatal accident	Number of employees inside per non-fatal accident	Number of employees outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Lohich Coal and Navigation Co., .....	15	9	24	23	6	29	344,430	159,737	5,839	2,708	8,538	359	301	253	451
Estate A. S. Van Wick, .....	1	.....	1	5	1	6	354,215	50,869	418	215	633	418	.....	84	213
Coxe Brothers and Co., Inc., .....	.....	.....	.....	.....	1	1	.....	.....	209	213	422	.....	.....	.....	.....
Evans Colliery Co., .....	1	.....	1	1	.....	1	17,360	17,260	48	41	89	48	.....	48	.....
Miscellaneous Companies, .....	.....	.....	.....	.....	.....	.....	.....	.....	5	4	9	.....	.....	.....	.....
Totals and averages for district, ....	17	9	26	29	8	37	246,770	144,541	6,510	5,151	9,691	383	353	224	398

TABLE C.—Classification of Fatal Accidents Inside and Outside of Mines

	Months												Totals	Percentages
	January	February	March	April	May	June	July	August	September	October	November	December		
Causes of Accidents Inside														
Falls of coal, .....			1				1	1					1	5.88
Falls of roof, .....													1	5.88
Mine cars, .....		1	1					1			2		7	41.18
Suffocation by gas, etc., .....													2	11.76
Explosions of powder and dynamite, .....												1	1	5.88
Blasts, premature and otherwise, .....				1							1		2	11.77
Struck by cage, .....												1	1	5.88
Rush of coal and water, .....												2	2	11.77
Totals, .....	2	1	3	1	1		1	1			3	4	17	100.00
Causes of Accidents Outside														
Cars, .....	1					1					1		3	33.33
Machinery, .....	1							1					2	22.22
Suffocation in chutes, etc., .....								1					1	11.11
Struck by a pole, .....			1										1	11.11
By falling, .....			1								1		2	22.22
Totals, .....	2		3			1		2			2		9	100.00
Grand totals inside and outside, .....	4	1	5	1	1	1	1	3			5	4	26	.....

TABLE D - Classification of Non-Fatal Accidents Inside and Outside of Mines

	Months												Totals	Percentages
	January	February	March	April	May	June	July	August	September	October	November	December		
Causes of Accidents Inside														
Falls of coal, .....			1					1					2	6.90
Mine cars, .....		1				1		1	1	1			5	17.24
Explosions of gas, .....								2			2		5	17.24
Explosions of powder and dynamite, .....			3										3	10.34
Blasts, premature and otherwise, .....				2				2	1	1	2		8	27.59
Struck by piece of coal, .....		1											1	3.45
Struck by a bar, .....			1										1	3.45
Falling in chute, .....						1	1						2	6.89
By falling, .....											1		1	3.45
By jumping, .....										1			1	3.45
Totals, .....		5	2	2		2	2	6	2	3	5		29	100.00
Causes of Accidents Outside														
Cars, .....			1			1					1	2	5	62.50
Machinery, .....	1												1	12.50
Explosion of blast, .....									1				1	12.50
By falling timber, ..												1	1	12.50
Totals, .....	1		1			1			1		1	3	8	100.00
Grand totals inside and outside, .....	1	5	3	2		3	2	6	3	3	6	3	37	.....



TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Miners, .....			1		1						1	2	5
Miners' laborers, .....		1	1				1				1		4
Drivers and runners, .....								1					1
Doorboys and helpers, .....									1				1
Pole boys, .....		1											1
Loaders, .....			1										1
Muckers, .....				1							1		2
Switch boys, .....												1	1
Batterymen, .....												1	1
Totals, .....	2	1	3	1	1		1	1			3	4	17
Outside													
Foremen, .....								1					1
Machinists, .....											1		1
Engineers and firemen, .....						1							1
Jig runners, .....		1											1
Laborers, .....		1	2					1			1		5
Totals, .....	2		2			1		2			2		9
Grand totals inside and outside, .....	4	1	5	1	1	1	1	3			5	4	26

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners, .....		1	2				1	5		1	4		14
Miners' laborers, .....		3				1				1	1		6
Shift bosses, .....		1											1
Drill runners, .....				1									1
Muckers, .....				1									1
Car pushers, .....						1							1
Polemen, .....							1						1
Batterymen, .....								1					1
Rockmen, .....									1				1
Hitchers, .....									1				1
Bottommen, .....										1			1
Totals, .....		5	2	2		2	2	6	2	3	5		29
Outside													
Foremen, .....									1				1
Engineers and firemen, .....												1	1
Statepickers, (boys), .....												1	1
Drag tenders, .....	1												1
Laborers, .....			1									1	2
Rock loaders, .....						1							1
Water boys, .....											1		1
Totals, .....	1		1			1			1		1	3	8
Grand totals inside and outside, .....	1	5	3	2		3	2	6	3	3	6	3	37

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	Totals
American, .....	2	1	...	...	...	1	...	2	...	...	1	9
English, .....	...	...	1	...	...	...	...	...	...	...	2	1
Polish, .....	...	...	...	1	...	...	1	...	...	...	...	2
Italian, .....	1	...	...	...	...	...	...	...	...	...	...	3
Slavonian, .....	...	...	3	...	1	...	...	1	...	...	2	7
Lithuanian, .....	1	...	...	...	...	...	...	...	...	...	1	2
Austrian, .....	...	...	1	...	...	...	...	...	...	...	1	1
Russian, .....	...	...	...	...	...	...	...	...	...	...	...	1
Totals, .....	4	1	5	1	1	1	1	3	...	...	5	26

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	Totals
American, .....	1	1	...	...	...	1	1	2	...	1	2	12
Scotch, .....	...	1	...	...	...	...	1	...	...	...	...	1
Irish, .....	...	2	...	...	...	...	...	1	...	...	...	3
Polish, .....	...	...	...	2	...	1	...	...	1	...	1	5
Italian, .....	...	...	3	...	...	...	...	3	1	2	1	10
Slavonian, .....	...	1	...	...	...	...	...	...	1	...	1	3
Lithuanian, .....	...	...	...	...	...	...	...	...	...	...	1	1
Austrian, .....	...	...	...	...	...	1	...	...	...	...	...	1
Greek, .....	...	...	...	...	...	...	...	...	...	...	...	1
Totals, .....	1	5	3	2	...	3	2	6	3	3	6	37

TABLE I.—Operators and mines, kind of openings, type and size of fans, size of furnaces, volume of air produced by fan or furnace per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	Kind of opening	Gaseous or non-gaseous	Method of ventilation	Diameter of fan in feet and inches	Width of blades in feet and inches	Depth of blades in feet and inches	Number of revolutions per minute	Water gauge developed—in inches	Name of fan	Power used	Area of furnace bars in square feet	Number of splits of air currents	Number of cubic feet of air per minute entering the mine at inlet	Total number of cubic feet of air per minute circulating in all the splits	Number of cubic feet of air per minute passing out at outlet	Number of persons employed inside
Lehigh Coal and Navigation Co.																
Nesquehoning Colliery:																
Number 1	Tunnel	Gaseous	Fan	21	7	3.3	72	1.2	Guibal	Steam	..	21	71,750	71,199	105,800	344
Number 2	Shaft	Gaseous	Fan	21	7	6.0	63	2.0	Guibal	Steam	..	12	135,060	77,010	181,065	241
Number 3	Slope	Gaseous	Fan	16	8	4.0	100	.6	Guibal	Steam	..	8	24,550	24,290	31,300	34
Number 4	Tunnel	Non-gas	Natural	..	..	..	..	..	..	..	..	1	10,200	12,400	12,300	31
Number 5	Drift	Non-gas	Natural	..	..	..	..	..	..	..	..	1	3,900	4,200	4,200	10
Lansford Colliery:																
Number 4	Shaft	Gaseous	Fan	24	8	7.0	90	1.8	Sturtevant	Steam	..	2	58,224	63,228	63,228	101
Number 5	Slope	Gaseous	Fan	21	7	6.6	50	.8	Guibal	Steam	..	4	95,963	99,857	99,857	239
Number 6	Shaft	Gaseous	Fan	22	8	6.0	86	1.4	Guibal	Steam	..	9	69,150	78,438	78,438	137
			{ Fan, .. { Natural	..	..	..	..	..	..	..	..	3	91,183	15,250	102,635	28
Condale Colliery:																
Number 2	Shaft	Gaseous	Fan	24	8	6.0	70	1.9	Guibal	Steam	..	4	65,909	60,932	83,844	123
Number 3	Slope	Gaseous	Natural	..	..	..	..	..	..	..	..	..	..	..	..	..
Number 4	Tunnel	Gaseous	Natural	..	..	..	..	..	..	..	..	..	..	..	..	..
Number 5	Shaft	Gaseous	{ Fan, .. { Natural	24	8	6.0	80	1.5	Guibal	Steam	..	4	53,585	25,979	30,181	142
Greenwood Colliery:																
Number 10	Shaft	Gaseous	Fan	24	8	6.0	74	1.8	Guibal	Steam	..	4	54,520	42,790	58,620	292
Number 10	Slope	Gaseous	Fan	..	..	..	..	..	..	..	..	5	30,540	47,510	47,510	197
Number 10	Tunnel	Gaseous	Fan	12	4	4.0	76	.6	Guibal	Steam	..	2	6,150	8,600	11,120	..

\* Impossible to get correct air measurements as the work done is robbing.



TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	Name of General Superintendent	Post Office	Name of Superintendent	Post Office	Railroad to Mine
Lehigh Coal and Navigation Co.						
Nesquehoning, .....	Carbon, ..					
Frimford, .....	Carbon, ..					
Condale, .....	{ Schuylkill, ..					
	{ Carbon, ..					
Greenwood, .....	{ Schuylkill, ..					
Rahm, .....	{ Schuylkill, ..					
Tamaqua, .....	{ Schuylkill, ..					
Greenwood Washery, .....	{ Schuylkill, ..					
Califate Washery, .....	{ Schuylkill, ..					
Hauto Washery, .....	{ Carbon, ..					
Estate A. S. VanWinkle						
Coleraine, .....	Carbon, ....	Edwin Ludlow, Vice President.	Lansford, .....	{ W. G. Whildn, In- side Supt. S. V. Fench, Out- side Supt., .....	Lansford, .....	L. and N. E. and C. R. R. of N. J.
Coxe Brothers and Co., Inc.						
Beaver Meadow, .....	Carbon, ....	John Harvey, .....	Hazleton, .....			L. V. P. and R. and C. R. R. of N. J.
Evans Colliery Co.						
Evans, .....	Carbon, ....	Thomas Thomas, .....	Wilkes-Barre, .....	W. H. Davies, .....	Hazleton, .....	Lehigh Valley
Moses Neyer						
Black Rock, .....	Carbon, ....	Gwilym Edwards, ...	Luzerne, .....	W. E. Smith, .....	Hazleton, .....	Lehigh Valley
		Moses Neyer, .....	Summit Hill, .....	Elmer Neyer, .....	Summit Hill, .....	



TABLE 2.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured, quantity of powder, dynamite and permissible explosives used, etc.

Names of Operators and Collieries	County	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employees	Total production of coal in tons	Number of days worked	Number of employees	Number of fatal accidents	Number of non-fatal accidents	Explosives		
										Number of pounds of powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used
Lehigh Coal and Navigation Co.												
Nesquehoning, .....	Carbon, .....	627,657	55,300	5,722	688,679	33	1,591	5	9	.....	369,358	55
Lansford, .....	Carbon, .....	613,540	118,928	69,548	802,016	245	2,459	6	7	.....	323,227	60
Coaldale, .....	Schuylkill, .....	690,738	17,413	14,375	722,528	274	1,626	4	4	300	313,771	77
Greenwood, .....	Carbon, .....	353,498	24,929	10,698	389,556	133	1,066	.....	3	.....	136,474	40
Rahn, .....	Schuylkill, .....	55,757	22,284	317,397	340,866	240	866	2	3	.....	118,194	62
Tamaqua, .....	Schuylkill, .....	259,979	55,116	6,118	321,213	238	741	6	3	.....	148,870	15
		2,785,268	327,434	128,685	3,241,387	.....	8,189	23	29	300	1,400,794	309
Washeries												
Coaldale, .....	Schuylkill, .....	83,629	21,335	4,269	109,223	272	111	.....	.....	.....	7,759	1
Greenwood, .....	Schuylkill, .....	97,748	19,556	7,337	124,631	255	86	.....	.....	.....	.....	.....
Hauto, .....	Carbon, .....	145,124	30,047	23,584	198,705	288	152	1	.....	.....	11,375	.....
Totals, .....		326,501	70,927	35,130	432,558	.....	349	1	.....	.....	19,134	1
Estate A. S. Van Winkle		3,111,769	398,361	163,815	3,673,945	.....	8,538	24	29	300	1,428,928	310
Coleraine, .....	Carbon, .....	208,430	42,016	3,899	254,345	262	633	1	6	37,500	7,700	83
Coxe Brothers and Co., Inc.												
Beaver Meadow, .....	Carbon, .....	213,808	22,768	4,239	240,815	250	422	.....	1	46,475	107,869	32



TABLE 2.—Part 2

Names of Operators	County	Number of Boilers			Locomotives			Total horse power	Number of steam engines of all classes	Total horse power	Number of pumps delivering water to surface	Capacity in gallons per minute	Quantity delivered to surface per minute—gallons	Number of electric dynamos	Number of air compressors
		Cylindrical	Horse power	Tubular	Horse power	Total horse power	Steam	Air	Electric						
Lehigh Coal and Navigation Co.,	{ Carbon, .....	3	186	140	28,976	29,162	38	....	59	38,571	23	47,243	9,597	8	17
Estate A. S. Van Winkle,	{ Schuylkill, .....	.....	.....	18	2,150	2,150	6	.....	.....	1,340	7	7,347	2,466	1	.....
Cone Brothers and Co., Inc.,	{ Carbon, .....	.....	.....	8	2,000	2,000	4	2	.....	1,700	1	1,200	1,100	1	2
Evans Colliery Co.,	{ Carbon, .....	.....	.....	.....	700	700	.....	.....	.....	325	3	2,100	1,200	.....	.....
Moses Neyer,	{ Carbon, .....	.....	.....	1	35	35	.....	.....	.....	30	.....	.....	.....	.....	.....
Totals,	.....	3	186	169	33,861	34,047	48	2	59	41,966	34	57,890	14,863	10	19







TABLE 4.—Fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 11	Defelich Fatsian, ....	Italian, .....	Laborer, .....	26	S.	....	....	Lansford, .....	Carbon, ..	Fatally injured by cars near rock chute. Outside.
	William Sadusky, ...	Lithuanian, ..	Doortender, ..	59	M.	1	....	Tamaqua, .....	Schuylkill, ..	Fatally injured between car and door in tunnel.
27	William Miscavage, ..	American, ..	Poleboy, .....	18	S.	....	....	Tamaqua, .....	Schuylkill, ..	Instantly killed between car and prop on gangway.
30	Roy W. Gottschall, ..	American, ..	Jig-runner, ..	16	S.	....	....	Rahn, .....	Schuylkill, ..	Killed by being caught on a revolving jig shaft. Outside.
Feb. 26	William Gordon, ....	American, ....	Laborer, .....	25	S.	....	....	Rahn, .....	Schuylkill, ..	Fatally injured by being bumped by cars at shaft bottom.
March 8	James Lesko, .....	Russian, ....	Laborer, .....	31	S.	....	....	Lansford, .....	Carbon, ..	Fatally injured by being struck by tippel-pole on bank. Outside.
12	Frank Bilechick, .....	Slavonian, ..	Laborer, .....	45	M.	1	1	Tamaqua, .....	Schuylkill, ..	Fatally injured by falling on timber wharf. Outside.
18	Joseph Kemitz, .....	Slavonian, ..	Loader, .....	29	M.	1	1	Nesquehoning, ..	Carbon, ..	Suffocated in a wet chute when attempting to load.
26	Henry Evans, .....	Slavonian, ..	Laborer, .....	18	S.	....	....	Nesquehoning, ..	Carbon, ..	Fatally injured by being caught between car and prop on gangway.
April 29	Evan Tonkin, .....	English, ....	Miner, .....	46	M.	1	1	Coaldale, .....	Schuylkill, ..	Fatally injured by fall of coal in chute.
30	John Modsky, .....	Polish, .....	Mucker, .....	30	S.	....	....	Nesquehoning, ..	Carbon, ..	Fatally injured by premature blast at face of tunnel.
May 25	Simon Prokopo, .....	Slavonian, ..	Miner, .....	27	S.	....	....	Coaldale, .....	Schuylkill, ..	Suffocated by gas at face of chute.
June 18	Clifton Emanuel, ....	American, ..	Fireman, .....	17	S.	....	....	Nesquehoning, ..	Carbon, ..	Killed by being run over by lokie-truck. Outside.
July 15	Jacob Matock, .....	Polish, .....	Laborer, .....	34	M.	1	....	Evans, .....	Carbon, ..	Killed by fall of roof near face of gangway.
Aug. 5	John Cukusko, .....	Slavonian, ..	Driver, .....	20	S.	....	....	Coaldale, .....	Schuylkill, ..	Fatally injured by cars in gangway. Died August 10th.
9	Sidney McMichael, ...	American, ..	Foreman, ....	32	M.	1	2	Hanlo, .....	Carbon, ..	Suffocated in coal pocket. Outside.
Nov. 21	Joseph Moore, .....	American, ..	Laborer, .....	63	M.	1	....	Lansford, .....	Carbon, ..	Killed by machinery in breaker. Outside.
12	Bartholome Torlione, ..	Italian, ....	Laborer, .....	49	S.	....	....	Coaldale, .....	Carbon, ..	Killed by premature blast at face of tunnel.
13	John Valant, .....	Slavonian, ..	Miner, .....	29	M.	1	3	Lansford, .....	Carbon, ..	Killed by being run over by cars on gangway.
19	Phil Lukie, .....	Italian, ....	Laborer, .....	23	S.	....	....	Nesquehoning, ..	Carbon, ..	Fatally injured by cars. Died November 27. Outside.

Nov. 21	John Ditsky, .....	Slavonian, ..	Switchboy, ...	16	S.	....	...	Coaldale, .....	Schuylkill, ..	Killed by falling under electric motor on gangway.
	Clifford Brode, .....	American, ..	Machinist, ...	22	S.	....	...	Tamaqua, .....	Schuylkill, ..	Fatally injured by falling from scaffold.
Dec. 6	Roland Williams, ....	American, ..	Batteryman, .	30	S.	....	...	Lansford, .....	Carbon, ..	Crushed to death under cage at bottom of shaft.
										Suffocated by rush of fine coal and water from No. 11 breast battery West Top Split Mammoth vein No. 14 shaft. A few days previous No. 11 breast had run through to the old workings of No. 11 shaft, and the coal, being wet and of a soft nature, rushed out of the battery and partly filled the heading up the heading or monkey near No. 11 breast battery and had passed No. 11 battery when suddenly another fall occurred in breast, causing the wet coal to rush from battery with such force as to bury these men, who were suffocated before they could be rescued.
19	John H. Houtz, ....	American, ..	Miner, .....	41	M.	1	4	Tamaqua, .....	Schuylkill, ..	Fatally injured by explosion of dynamite on gangway. Died December 28.
	John Urbanavage, ..	Lithuanian, ..	Miner, .....	24	S.	....	....	Tamaqua, .....	Schuylkill, ..	
22	John Pashusa, .....	Austrian, ..	Loader, .....	23	S.	....	....	Lansford, .....	Carbon, ..	

TABLE 5.—Non-fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 2	John Mattie, .....	American, ..	Drag tender, ...	27	S.	Beaver Meadow, .....	Carbon, ..	Arm fractured by falling into drag line.
Feb. 3	Fred Mackey, .....	Scotch, ....	Shift boss, .....	33	M.	.....	.....	One eye destroyed and the other one injured by an explosion of dynamite in Summit Tunnel.
	William Reese, .....	American, ..	Laborer, .....	46	M.	Nesquehoning, .....	Carbon, ..	Eye destroyed and body lacerated by an explosion of dynamite in Summit Tunnel.
	Winigied Adameczuk, .....	Polish, ....	Laborer, .....	31	M.	.....	.....	Legs lacerated by an explosion of dynamite in Summit Tunnel.
12	Martin Setina, .....	Polish, .....	Laborer, .....	17	S.	Lansford, .....	Carbon, ..	Legs fractured by being caught between cars on gangway.
26	John Veslousky, .....	Lithuanian, ..	Miner, .....	28	M.	Tamaqua, .....	Schuylkill, ..	Skull fractured by being struck by coal coming down roadway.
March 18	John Motias, .....	Slavonian, ..	Laborer, .....	52	M.	Coleraine, .....	Carbon, ..	Leg lacerated while coupling cars on strip-ping. Outside.
26	Frank Stock, .....	Slavonian, ..	Miner, .....	31	M.	Coleraine, .....	Carbon, ..	Arm fractured by being struck by bar while barring top coal down in chute.
29	John Rubiear, .....	Slavonian, ..	Miner, .....	22	S.	Coaldale, .....	Schuylkill, ..	Leg injured by fall of coal in chute.
April 30	Peter Bassa, .....	Italian, .....	Drill runner, .....	35	M.	.....	.....	Eye destroyed and hands and face cut by premature blast in face of Summit Tunnel.
	James Carrer, .....	Italian, .....	Mucker, .....	28	M.	Nesquehoning, .....	Carbon, ..	Head and body lacerated by premature blast in face of Summit Tunnel.
June 4	Charles Breslin, .....	American, ..	Car pusher, ....	20	S.	Coaldale, .....	Schuylkill, ..	Skull fractured by being caught between car and structure.
14	Andrew Maloy, .....	Greek, .....	Laborer, .....	31	M.	Lansford, .....	Carbon, ..	Head and eye injured by falling into chute.
24	Frank Filibat, .....	Italian, .....	Rock loader, ....	39	M.	Lansford, .....	Carbon, ..	Leg injured while coupling cars while they were in motion.
July 3	Thomas McCann, .....	American, ..	Poteman, .....	18	S.	Nesquehoning, .....	Carbon, ..	Leg broken by falling over an empty dualin box on gangway.
18	Terrance Donahue, ...	Irish, .....	Miner, .....	45	M.	Nesquehoning, .....	Carbon, ..	Leg broken, otherwise injured by fall; lung into chute.
Aug. 2	Christopher Wenzel, ..	American, ..	Miner, .....	46	M.	Greenwood, .....	Schuylkill, ..	Hands and face burned by explosion of gas at face of breast.

Aug.	2	William Duval, .....	American, ..	Miner, .....	32	M.	Greenwood, .....	Schuykill, ..	Hands and face burned by explosion of gas at face of breast.
	6	Paul Ermis, .....	Slavonian, ..	Batterman, ....	23	M.	Rahn, .....	Schuykill, ..	Leg broken by being caught between car and high side of gangway that he was driving.
	8	{ Mike Duster, .....	Slavonian, ..	Miner, .....	25	M.	{ Coleraine, .....	Carbon, ..	Head cut and shoulder bruised.
		{ Adam Gurab, .....	Polish, .....	Miner, .....	23	S.			Leg fractured by coal from a shot in cross-cut. They were too slow in getting to a place of safety.
	17	George Mihalenko, ..	Slavonian, ..	Miner, .....	28	M.	Coleraine, .....	Carbon, ..	Leg fractured by fall of coal off pillar in breast.
Sept.	6	Theodore Mazlan, .....	Slavonian, ..	Hitcher, .....	30	M.	Evans, .....	Carbon, ..	Skull fractured by being struck by derailed car at foot of slope.
	12	Louis Nardozi, .....	Italian, .....	Foreman, .....	44	M.	Nesquehoning, .....	Carbon, ..	Eyes injured and two fingers of right hand blown off by a premature blast on strip-pling. Outside.
	17	Anthony Zanh, .....	Lithuanian, ..	Rockman, .....	33	M.	Coaldale, .....	Schuykill, ..	Head, hands and shoulder lacerated by flying particles of rock from hole in face of chute. The fuse was too short.
Oct.	5	Arthur Elliott, .....	American, ..	Bottomman, ....	23	M.	Tamaqua, .....	Schuykill, ..	Body maimed between car and shaft timber on second level.
	10	John Martincovitch, ..	Slavonian, ..	Laborer, .....	44	M.	Rahn, .....	Schuykill, ..	Eyes blown out and head and face injured by premature blast at face of gangway.
	23	John Pisiack, .....	Slavonian, ..	Miner, .....	26	M.	Coaldale, .....	Schuykill, ..	Leg broken by bumping from chute platform to gangway.
Nov.	11	Mich Guilda, .....	Slavonian, ..	Miner, .....	27	S.	Nesquehoning, .....	Carbon, ..	One eye destroyed and the other one injured by premature blast in gangway.
	12	Cosino Mazzalle, .....	Italian, .....	Miner, .....	34	M.	Coleraine, .....	Carbon, ..	Skull and left arm fractured by premature blast at face of gangway.
		Charles Miller, .....	American, ..	Waterboy, .....	15	S.	Lansford, .....	Carbon, ..	Leg crushed by locomotive and had to be amputated. Outside.
	13	William Petrousky, ..	Lithuanian, ..	Miner, .....	38	S.	Rahn, .....	Schuykill, ..	Slightly burned by explosion of gas at face of breast.
	22	{ Joe Saxon, .....	Austrian, ..	Miner, .....	28	M.	{ Lansford, .....	Carbon, {	Hands and face burned by an explosion of gas at face of chute.
Dec.	3	{ James Johnson, .....	American, ..	Laborer, .....	33	S.			Leg fractured and body bruised by timber falling off truck on timber wharf. Outside.
		George Holenback, ..	American, ..	Laborer, .....	22	S.	Tamaqua, .....	Schuykill, ..	
	18	Grover Frantz, .....	American, ..	Slatepicker, ....	16	S.	Greenwood, .....	Schuykill, ..	Right arm crushed and had to be amputated. He fell under a car. Outside.
	22	William Campbell, ..	American, ..	Locomotive engineer, ..	26	S.	Lansford, .....	Carbon, ..	Two ribs and collar bone fractured by being struck by derailed cars. Outside.

## CONDITION OF COLLIERIES

## LEHIGH COAL AND NAVIGATION COMPANY

Nesquehoning Colliery.—Ventilation, with few exceptions, good. Roads, drainage and general condition as to safety, good.

Lansford Colliery.—Ventilation, generally good. Roads, drainage and general condition as to safety, good.

Coaldale and Tamaqua Collieries.—Ventilation, with few exceptions, good. Roads, drainage and general condition as to safety, good.

Greenwood and Rahn.—General condition as to safety, good. Roads and drainage, fair.

## ESTATE A. S. VAN WICKLE

Coleraine Colliery.—Ventilation, roads, drainage and general condition as to safety, good.

## COXE BROTHERS AND COMPANY, INCORPORATED

Beaver Meadow Colliery.—Ventilation, drainage and roads, good. General condition as to safety, good.

## EVANS COLLIERY COMPANY

Evans Colliery.—Ventilation, drainage and roads, fair. General condition as to safety, good.

## MOSES NEYER

Black Rock Colliery.—Ventilation, drainage and roads, fair. General condition as to safety, good.

## W. R. McCREADY

Summit Hill Colliery.—Abandoned January 8, 1912.

## IMPROVEMENTS

## LEHIGH COAL AND NAVIGATION COMPANY

Nesquehoning Colliery.—Outside: Installed one 350 K. W. engine and generator, one 2,500 H. P. feed water heater, 5,000 feet 6-inch water line, 6-inch feed water line, No. 1 breaker boiler house; one 15-ton Baldwin locomotive; one Jeanesville pump, 23 by 38 by 12 by 36 inches, for wash water. Built railroad to Summit Colliery to take coal to Nesquehoning breaker; and heating house for mine cars. Installed a boiler plant, new heater, exhaust and feed water lines. Extended electric haulage.

No. 1 Tunnel.—Tunnel driven from East Skidmore south to Seven Foot, 175 feet long. Extended East tunnel 335 feet long.



Lausanne Drainage Tunnel.—A connection is to be made between Nesquehoning and Lansford Collieries, of which 477 feet were driven during the year. Total distance of drainage tunnel to date is 20,282 feet.

No. 2 Shaft.—Tunnel driven from Mammoth to Seven Foot, North dip, Center basin, 118 feet; tunnel from East Seven Foot south to Mammoth, South dip, 145 feet; rock hole from Buck Mountain drift to surface, 92 feet long, to be used as column way; tunnel from East Seven Foot to Mammoth gangway, No. 2 Shaft, 156 feet; tunnel from Skidmore to Buck Mountain, South basin, 350 feet. Stables were made fireproof. Telephones installed inside.

Lansford Colliery.—Briquetting plant completed. Public road made from No. 5 to east end of Andrews ville.

No. 6 Shaft.—Outside: Fire connection Red and White Ash breakers. New wash house. New feed water heaters. New fence around breaker. Additional jigs installed. New car shop. Head house for No. 6 culm bank and track to same. New colliery office. One 300 K. W. rotary converter installed. New head frame at No. 6 coal and water shafts. Installed one 2,178 cubic foot air compressor; one trough for slushing ashes, and one 6-inch Jarecki pipe machine. New refuse track to abandon plane. Installed slush conveyor to handle silt from breaker; also steam line to mountain fan, which will do away with boiler room on mountain. Heating house for thawing mine coal.

Inside: Tunnel driven from East Mammoth to Primrose, No. 6 shaft level, 166 feet. Telephones installed inside. Built new stable, 3rd level, No. 6 shaft, and pump rooms and stables made fireproof.

No. 4 Shaft. Tunnel driven from Mammoth vein, North dip, to Mammoth vein, South dip, 654 feet long; air tunnel to Mammoth vein, 432 feet long; haulageway in Skidmore vein, 50 feet long; muleway from 5th to 4th level, 528 feet long. Made concrete floor in pump room, No. 4 slope, 4th level, and made pump rooms and stables fireproof. Installed telephones inside; new cable for No. 4 slope; 1,300 cubic foot air compressor. Built lamp house and charging station. They are preparing to erect new hoisting engines on No. 4 water, coal and tender shafts, and are placing steel head frame over shaft, and building fireproof engine houses of steel, concrete and tile.

No. 5—Outside: Wash house completed. Installed Oliver saw table and saw. Erected new safety lamp house, and installed 300 electric lamps and apparatus for charging same.

Inside: Motor houses and stables made fireproof.

Coaldale Colliery.—Extended Shepps tunnel; total distance 854 feet.

No. 9 Shaft.—Tunnel driven from Primrose to Orchard vein, 2nd level, 134 feet, and air tunnel, 2nd level, 181 feet. Built new motor house, 2nd level. Electric haulage extended 2,000 feet.

Outside.—New wash house. Installed overrun loose drum, shaft engine. Made concrete bridge over lokie road to No. 9 tunnel.

No. 8.—Inside: Drilled 6-inch bore hole to Primrose anticlinal, 127 feet. Installed inside telephones. Extended electric haulage 4,500 feet. Stables and engine houses made fireproof. Drilled 8-inch bore hole from surface for operating inside. Trial slope between 6th and 7th levels, and installed a pair of 30 by 72-inch hoisting engines on the surface. Installed one 8½-ton electric locomotive, 3rd level, No. 8 slope.

No. 8.—Outside: Installed 1,860 feet of 8-inch wrought iron steam pipe to No. 8 mountain fan, and ash conveyor No. 8 boiler house; No. 8 engine house made fireproof. Addition made to breaker for 12 additional jigs. Built fence around colliery.

Springdale.—Extensive stripping operations at Springdale tunnel.

Greenwood Colliery.—Outside: Installed 6 jigs in breaker. Also installed slush shakers; 12 Standard dump cars; and slush conveyor line. Built fence around colliery. Slush pocket completed.

No. 10.—Inside: Tunnel driven from Mammoth to Forty Foot, 253 feet. Built new motor house.

No. 10 Slope.—Brick walls for fire protection placed in Slope and Shaft workings. Stables and engine houses made fireproof. Installed one 2,200 cubic foot air compressor, also telephones inside.

Rahn Colliery.—Outside: Breaker extended and 4 Lehigh Valley jigs installed. One set coal elevators and two nut coal spirals placed in breaker. Fence built around breaker. Installed one 18-ton Vulcan locomotive and steam line from No. 10 to No. 11 breaker to permit the abandonment of No. 11 breaker boiler house. Built wash house in Fosters' tunnel and in No. 11 tunnel.

Inside.—Tunnel driven from West Orchard to Primrose vein, shaft level 89 feet. New 8-inch steam line to inside pumps; fireproofed stables and pump houses. Installed one  $9\frac{1}{2}$ -ton gasoline engine; and one new 809 cubic foot air compressor.

Tamaqua Colliery.—Outside: Fire protection. New car hoist. Fence around breaker. Installed 6 additional jigs; 30 new steel timber trucks; 2 car stops; 12 Standard dump cars; 12 inch by 20 inch car hoist engines at breaker; dirt loading pocket and shed; flume line; 1 wash water pump; built frame wash house.

Inside.—South air tunnel completed, 332 feet long; tunnel driven from top to bottom split, Mammoth vein, 150 feet long. Inside telephones. Installed one 20-foot fan north side, and steam line connecting same; one 2,200 cubic foot air compressor; one  $8\frac{1}{2}$  ton electric locomotive, 3rd level.

Summit Colliery.—Double track tunnel driven 1,697 feet. Single track tunnel driven 1,234 feet.

Outside.—Railroad to Nesquehoning Colliery; air compressor plant, one  $8\frac{1}{2}$ -ton General Electric locomotive.

Hauto Washery.—Installed 600 H. P. Sterling boilers, one 18-ton Vulcan locomotive. One Model-60 Marion steam shovel. New addition made to boiler house. Installed one 350 K. V. A. generator set and house; wire fence; one 2,200 cubic foot air compressor; ash handling plant. Are preparing to erect new washery. Storage yard. Arrangement made for handling ashes from boiler room.

#### ESTATE A. S. VAN WICKLE

Coleraine Colliery.—No. 1 Slope, which is now used as a pumping slope only, repaired the mouth of slope by building stone walls 42 feet long by 7 feet high on each side, placing steel I beams for collars and lagging with steel rails, thereby doing away with timber. The pump house on the east side of the slope bottom, size 47 feet by 21 feet, was made fireproof by putting in a cement floor. Pump house on the west side of slope, 79 feet long and 12 feet wide, was made fireproof by building stone and cement walls and making cement floors.

Buck Mountain Slope.—Enlarged the pump house at foot of slope, put down a cement floor and installed a new Goyne compound duplex steam pump size 18 by 30 by 14 by 24 inches. This pump house is also fireproof.

Made a new fireproof stable, 57 feet long by 18 feet wide in the Gamma vein to accommodate 12 mules, the material used being steel and cement. Made a concrete room, 12 feet long by 5 feet wide, for the use of the stable boss and to keep harness in. Also made a stone pump house, 18 feet long by 10 feet wide, making it fireproof, a stone oil house and put in a new telephone. Re-opened the west 2nd level gangway in the Gamma vein, which had been abandoned for several years, a distance of 1,650 feet preparatory to taking out the pillars.

Wheel-Barrow-Basin.—Made a fireproof stable of steel and cement 70 feet long by 18 feet wide to accommodate 14 mules. Made a hospital of stone and cement and equipped it with steam heat, etc. Also made a tool house of the same material. Drove a tunnel from the foot of the Wheel Barrow basin, Gamma slope, South to the Buck Mountain vein, a distance of 37 feet.

No. 2 New Slope, Mammoth vein.—Made a fireproof stable to hold 10 mules, material used, steel and concrete; also made the pump house fireproof by concreting the same.

No. 2 New Wharton Slope. (Rock.)—Sank the main slope down 171 feet at an angle of 25 degrees, making total length of slope 597 feet. Turned a counter off from the above slope at a point 490 feet from the mouth of slope to connect with the No. 2 New Slope, Mammoth vein, preparatory to abandoning the same as a hoisting slope, length of counter 80 feet on a curve of 25 feet radius, at 19 degrees dip; have driven a rock turnout at the foot of the counter dip 61 feet long. Constructed a new flume 5 by 6 by 8 feet by 600 feet long, to carry the creek over the part of the No. 2 basin that is being robbed out.

No. 7 Buck Mountain Slope.—Drove a tunnel from West 2nd level gangway to the Gamma vein, a distance of 132 feet. Drove 4 rock chutes, their combined length being 130 feet at an angle of 28 degrees, through rock from the Buck Mountain to the Gamma vein, to mine coal that was inaccessible from the Gamma workings. No. 7 Gamma hoisting engine was abandoned during the year, and the coal hoisted from the Gamma slope by connecting the rope to the No. 7 Buck Mountain slope hoisting engine, 1,000 feet farther east by means of horizontal sheaves.

Flory Slope.—Drove a tunnel 7 by 9 feet from the underlap through to the regular vein, 95 feet long.

Installed a 12 by 18 inch by 150 feet long cast iron trough to wash the ashes from the front of the boiler fires to a conveyor line east of the boiler house. Installed conveyor line, 90 foot centers, to convey the ashes to a pocket from which the ashes are loaded into dump cars and taken to the ash bank by locomotive.

#### COXE BROTHERS AND COMPANY, INCORPORATED

Beaver Meadow Colliery.—The main drainage tunnel was extended 677 feet. A rock slope 8 by 14 by 110 feet long was driven to the surface from No. 6 West Wharton. A tile office and warehouse were erected to replace the old wood structure. A 12-foot Guibal fan,



directly connected to a 14½ by 20-inch engine and housed with concrete was erected to ventilate the No. 4 slope workings. A creek channel, 1,400 feet long is being constructed to change the course of Beaver Creek, in order to permit the extending of Greenfield stripping farther westward. From the No. 8 Basin stripping there has been removed 105,380 cubic yards of cover and from the Greenfield Basin 18,026 cubic yards, bringing the total cover excavated in these strippings to 1,314,418 cubic yards to January 1, 1913.

#### EVANS COLLIERY COMPANY

Evans Colliery.—Installed scraper line into flat slate bank. Reopened and pumped out the No. 7 slope, installed hoist and built engine house, constructed tracks from No. 1 to No. 7 slopes. Began the pumping out of No. 1 slope and the opening of counter gangways in No. 1 workings which has been going ahead ever since. Built the following buildings: One pump house and installed pump for pumping on breaker, two engine houses at washery, one cover overhead of scraper line, one car shop at No. 1 slope, one reservoir for feeding on breaker. Erected one fan at No. 7 slope; erected one set of boney rolls and re-built one incline scraper line.

## EIGHTEENTH DISTRICT

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SCHUYLKILL COUNTY

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Pottsville, Pa., February 18, 1913.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor of transmitting herewith my Annual Report as Inspector of Mines of the Eighteenth Anthracite District for the year ending December 31, 1912.

Respectfully submitted,

JOHN CURRAN, Inspector.



## SUMMARY OF STATISTICS

Number of collieries, .....	15
Number of mines, .....	45
Number of mines in operation, .....	45
Number of tons of coal shipped to market, .....	2,320,374
Number of tons used at mines for steam and heat, .....	309,161
Number of tons sold to local trade and used by employes, .....	35,004
Number of tons produced, .....	2,664,539
Number of tons produced by compressed air machines, ..	.....
Number of tons produced by electrical machines, .....	.....
Number of persons employed inside of mines, .....	4,497
Number of persons employed outside, .....	2,066
Number of fatal accidents inside of mines, .....	15
Number of fatal accidents outside, .....	1
Number of non-fatal accidents inside of mines, .....	47
Number of non-fatal accidents outside, .....	9
Number of tons of coal produced per fatal accident inside, ..	177,636
Number of tons produced per fatal accident outside, ....	2,664,539
Number of tons produced per fatal accident inside and outside, .....	166,533
Number of persons employed per fatal accident inside, ..	300
Number of persons employed per fatal accident outside, ..	2,066
Number of persons employed per fatal accident inside and outside, .....	410
Number of persons employed per non-fatal accident inside, ..	96
Number of persons employed per non-fatal accident outside, ..	229
Number of persons employed per non-fatal accident inside and outside, .....	117
Number of wives made widows, .....	8
Number of children made orphans, .....	16
Number of steam locomotives used inside of mines, ....	1
Number of steam locomotives used outside, .....	33
Number of compressed air locomotives used inside, ....	8
Number of compressed air locomotives used outside, ...	.....
Number of electric motors used inside, .....	9
Number of electric motors used outside, .....	.....
Number of fans in use, .....	36
Number of furnaces in use, .....	.....
Number of gaseous mines in operation, .....	25
Number of non-gaseous mines in operation, .....	20
Number of new mines opened, .....	2
Number of old mines abandoned, .....	.....

## TABLE A

## PRODUCTION OF COAL

Names of Operators	Tons
Lehigh and Wilkes-Barre Coal Company, .....	708,069
Philadelphia and Reading Coal and Iron Company, .....	627,480
Coxe Brothers and Company, Incorporated, .....	259,477
Maryd Coal Company, .....	247,230
Dodson Coal Company, .....	221,683
Lehigh Valley Coal Company, .....	193,734
Alliance Coal Company, .....	125,174
Mill Creek Coal Company, .....	102,969
Schuylkill and Lehigh Coal Company, .....	54,820
Port Carbon Coal Company, .....	38,747
East Lehigh Coal Company, .....	35,926
Phillips Brothers Coal Company, .....	29,307
Gorman and Campion, .....	19,923
Total, .....	<u>2,664,539</u>

## Production by Counties

Schuylkill, .....	<u>2,664,539</u>
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TABLE B—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Number of employees inside	Number of employees outside	Total number of employees	Number of employees inside per fatal accident	Number of employees outside per fatal accident	Number of employees inside per non-fatal accident	Number of employees outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total								
Lehigh and Wilkes-Barre Coal Co., .....	2	1	3	9	5	14	354,034	1,242	420	1,662	621	420	138	84
Philadelphia and Reading Coal and Iron Co., .....	3	.....	3	12	.....	12	209,169	1,193	529	1,722	397	.....	99	.....
Coke Brothers and Co., Incorporated, ..	.....	.....	.....	2	1	3	129,738	305	147	455	.....	.....	134	147
Maryd Coal Co., .....	.....	.....	.....	.....	2	2	.....	305	168	475	.....	.....	.....	84
Dodson Coal Co., .....	3	.....	3	.....	.....	.....	73,894	303	182	485	101	.....	.....	.....
Lehigh Valley Coal Co., .....	2	.....	2	11	.....	11	96,897	384	185	569	192	.....	.....	.....
Alliance Coal Co., .....	4	.....	4	11	1	12	31,293	348	106	454	87	.....	35	106
Mill Creek Coal Co., .....	.....	.....	.....	2	.....	2	.....	119	121	240	.....	.....	32	.....
East Lehigh Coal Co., .....	1	.....	1	.....	.....	.....	51,484	71	60	131	71	.....	59	.....
Miscellaneous Companies, .....	.....	.....	.....	.....	.....	.....	35,936	222	148	370	.....	.....	.....	.....
Totals and averages for district, ..	15	1	16	47	9	56	177,636	4,497	2,066	6,563	300	2,065	96	229

TABLE C.—Classification of Fatal Accidents Inside and Outside of Mines

	Months												Percentages
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Causes of Accidents Inside													
Falls of coal, .....			1			1		2		2		1	7
Falls of slate, .....	1						1				1		3
Mine cars, .....			1										1
Blasts, premature and otherwise, .....									1				1
Falling into slopes, etc., .....									1				1
Rush of culm and water, .....												1	1
Rush of rock, .....	1												1
Totals, .....	2		2			1	1	2	2	2	1	2	15
Causes of Accidents Outside													
By falling, .....											1		1
Totals, .....											1		1
Grand totals inside and outside, .....	2		2			1	1	2	2	2	2	2	16

TABLE D.—Classification of Non-Fatal Accidents Inside and Outside of Mines

	Months												Percentages
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Causes of Accidents Inside													
Falls of coal, .....		2	1			1				1			5
Falls of slate, .....			1			1	1		1			1	5
Falls of roof, .....								1	1				2
Mine cars, .....			3					1	2		2		8
Explosions of gas, ...	3	2	2			3		1	3		2		16
Blasts, premature and otherwise, .....									2	2			4
Crushed at batteries, ..	1		1										2
Struck by pipe, .....				1								1	1
By falling, .....							1						1
Struck by pick, .....									1				1
Struck by coal, .....										1			1
Struck by timber, ...										1			1
Struck by piece of slate, .....										1			1
Totals, .....	1	4	8	1		5	2	2	10	6	4	1	47
Causes of Accidents Outside													
Cars, .....		2										2	4
Struck by frozen culm, ..			1										1
Struck by timber, .....				1									1
Struck by piece of rock, .....						1							1
Struck by brake, .....							1						1
Struck by hammer, ...							1						1
Totals, .....		2	1	1		1	2	2	10	6	4	2	9
Grand totals inside and outside, .....	4	6	9	2		6	4	2	10	6	4	3	56

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Miners, .....	1	...	1	...	...	1	...	1	2	1	1	1	9
Miners' laborers, .....	1	...	...	...	...	...	1	1	...	1	...	1	5
Doorboys and helpers, .....	...	...	1	...	...	...	...	...	...	...	...	...	1
Totals, .....	2	...	2	...	...	1	1	2	2	2	1	2	15
Outside													
Blacksmiths and carpenters, ..	...	...	...	...	...	...	...	...	...	...	1	...	1
Totals, .....	...	...	...	...	...	...	...	...	...	...	1	...	1
Grand totals inside and out- side, .....	2	...	2	...	...	1	1	2	2	2	2	2	16

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Miners, .....	2	3	4	....	....	5	1	1	8	3	2	1	30
Miners' laborers, .....	1	1	2	1	....	....	....	1	1	2	....	....	8
Drivers and runners, .....	1	....	1	....	....	....	....	1	1	....	1	....	5
Company men, .....	....	....	1	....	....	....	1	....	....	1	....	....	3
Engineers, .....	....	....	....	....	....	....	....	....	....	....	1	....	1
Totals, .....	4	4	8	1	....	5	2	2	10	6	4	1	47
Outside													
Engineers and firemen, .....	....	....	....	1	....	....	....	....	....	....	....	....	1
Loaders, .....	....	....	....	....	....	....	1	....	....	....	....	....	1
Clute bosses, .....	....	....	....	....	....	....	1	....	....	....	....	....	1
Patchers, .....	....	....	....	....	....	....	....	....	....	....	....	12	2
Laborers, .....	....	2	1	....	....	1	....	....	....	....	....	....	4
Totals, .....	....	2	1	1	....	1	2	....	....	....	....	12	9
Grand totals inside and outside, .....	4	6	9	2	....	6	4	2	10	6	4	3	56



TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months											
	Totals	December	November	October	September	August	July	June	May	April	March	February
American, .....	1	1	1									
Polish, .....	3	1				1				2		
Slavonian, .....	1											
Lithuanian, .....	7	1	1	1	2	1	1	1				1
Austrian, .....	2						1					
Russian, .....	1											1
French, .....	1	1										
Totals, .....	16	2	2	2	2	2	1	1			2	2

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months											
	Totals	December	November	October	September	August	July	June	May	April	March	February
American, .....	9	1	2				2			2	1	1
Welsh, .....	1					1						
Irish, .....	1						1					
Polish, .....	13	1		2				5			2	2
Hungarian, .....	3				2						1	
Italian, .....	3	1	1									
Slavonian, .....	2	1						1			2	
Lithuanian, .....	16				1	1	1				3	
Russian, .....	2			1	1							
Totals, .....	56	3	4	6	10	2	4	6		2	9	6



[illegible]

\*New opening.

Several openings from breach holes and strippings.

+No. 1 Level and No. 2 Level part of No. 1 Shaft.

the receiving air from strippings.

TABLE I—Continued

Names of Operators and Mines	Kind of opening	Gaseous or non-gaseous	Method of ventilation	Diameter of fan in feet and inches	Width of blades in feet and inches	Depth of blades in feet and inches	Number of revolutions per minute	Water gauge developed—in inches	Name of fan	Power used	Number of splits of air currents	Number of cubic feet of air per minute entering the mine at inlet	Total number of cubic feet of air per minute circulating in all the splits	Number of cubic feet of air per minute passing out at outlet	Number of persons employed inside
												6,600	6,000	6,400	38
Schuylkill and Lehigh Coal Co. Brookton Colliery:	Slope, .....	Non-gas, ..	Fan, .....	8	3.0	3.6	60	.75	Guilal, ....	Steam, .....	1	.....	.....	.....	82
Port Carbon Coal Co. Lucy R. Colliery:	Drift, .....	Gaseous, ..	Natural, ..	.....	.....	.....	.....	.....	.....	.....	8	.....	.....	.....	84
East Lehigh Coal Co. East Lehigh Colliery:	Slope, .....	Gaseous, ..	Fan, ... {	12	4.0	4.6	105	1.	Guilal, ....	Steam, .....	2	9,500	9,500	10,000	}
East Lehigh, .....	Slope, .....	Gaseous, ..	10	4.0	3.0	100	.....	.9	Guilal, ....	Steam, .....	.....	10,500	10,500	12,000	
Phillips Brothers Coal Co. Silver Hill Colliery:	Slope, .....	Gaseous, ..	Fan, .....	12	4.0	2.0	65	1.8	Stine, .....	Steam, .....	2	45,000	38,500	48,000	38
Gorman and Campion Bell Colliery:	Slope, .....	Non-gas, ..	Natural, ..	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	35

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	Name of General Superintendent	Post Office	Name of Superintendent	Post Office	Railroad to Mine
Lehigh and Wilkes-Barre Coal Co. Audenried No. 4, ..... Honey Brook No. 5, .....	{ Schuylkill, ... }	C. F. Huber, .....	Wilkes-Barre, .....	Walter Fahreinger, ..	Audenried, .....	C. R. R. of N. J.
Philadelphia and Reading Coal and Iron Co. Silver Creek, ..... Eagle Hill, .....		W. J. Richards, ..... General Manager,	Pottsville, .....	{ Reese Tasker, ..... Mining Supt. George Hadesty, .... Division Supt. David Jones, ..... Inside Supt. William Tiley, ..... Outside Supt. }	{ Pottsville, ..... Pottsville, ..... Pottsville, ..... Pottsville, ..... }	P. and R.
Coxe Brothers and Co., Incorporated Oneida, ..... Maryd, ..... Dodson Coal Co. Morea, .....	Schuylkill, .... Schuylkill, .... Schuylkill, ....	Thomas Thomas, .... T. E. Snyder, ..... Truman M. Dodson, ..... Vice President,	Wilkes-Barre, ..... Hazleton, .....	W. H. Davies, ..... Arthur Kennedy, ....	Hazleton, ..... Maryd, .....	Lehigh Valley C. R. R. of N. J. and P. and R. Penna. and Lehigh Valley
Lehigh Valley Coal Co. Buck Mountain,* ..... Alliance Coal Co. Mill Creek Coal Co. Middle Lehigh, ..... Schuylkill and Lehigh Coal Co. Brookton, .....	Schuylkill, .... Schuylkill, .... Schuylkill, .... Schuylkill, .... Schuylkill, ....	Thomas Thomas, .... Edwin Ludlow, ..... Vice President, T. D. Jones, .....	Wilkes-Barre, ..... Lansford, ..... New Boston, .....	William Underwood, ..... Thomas F. Downing, J. E. Jones, .....	Mahanoy City, ..... Kaska, ..... New Boston, .....	Lehigh Valley P. and R. Penna. and L. V.
Buck Mountain and Vulcan Collieries were combined as Buck Mountain Colliery April 1.	Schuylkill, ....	Jacob Britton, .....	Pottsville, .....	Jacob Britton, .....	Pottsville, .....	P. and R.

\*Buck Mountain and Vulcan Collieries were combined as Buck Mountain Colliery April 1.



TABLE 1—Continued

Names of Operators and Collieries	County	Name of General Superintendent	Post Office	Name of Superintendent	Post Office	Railroad to Mine
Port Carbon Coal Co. Lucy R., .....	Schuykill, .....	Thomas F. Slattery,	Philadelphia, Stephen Girard Building,	Joseph V. Connor, ..	Port Carbon, .....	P. and R.
East Lehigh Coal Co. East Lehigh, .....	Schuykill, .....	E. M. B. Shepp, ..	Tamaqua, .....	.....	.....	P. and R.
Phillips Brothers Coal Co. Silver Hill, .....	Schuykill, .....	.....	.....	James S. Reese, ....	Middleport, .....	P. and R.
Gorman and Champion Bell, .....	Schuykill, .....	Daniel J. Slattery, ..	Tuscarora, .....	Daniel J. Slattery, ...	Tuscarora, .....	P. and R.

TABLE 2.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured, quantity of powder, dynamite and permissible explosives used, etc.

Names of Operators and Collieries	County	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employees	Total production of coal in tons	Number of days worked	Number of employees	Number of fatal accidents	Number of non-fatal accidents	Explosives			Number of horses and mules
										Number of pounds of powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used	
Lehigh and Wilkes-Barre Coal Co. (Audenried No. 4, for) (Stripping Contractor), Hart's Brook No. 8, (Stripping Contractor), Miscellaneous	Schuykill	341,932 ..... 290,305 ..... 632,237	56,191 ..... 16,130 ..... 72,321	3,511 ..... ..... ..... 3,511	401,634 ..... 306,435 ..... 708,069	228 ..... 235 ..... .....	879 40 594 51 88 1,662	1 2 2 ..... 3	10 4 ..... ..... 14	56,700 ..... 4,900 ..... 61,600	251,630 ..... 164,655 ..... 416,285	..... ..... ..... ..... .....	77 ..... 44 ..... 121
Totals,													
Philadelphia and Reading Coal and Silver Creek, Iron Co. Eagle Hill, Totals,	Schuykill	258,477 205,988 564,465	28,120 25,347 53,467	4,916 4,682 9,548	291,512 231,367 627,480	271 217 .....	1,006 646 1,722	1 2 3	5 7 12	67,900 16,375 84,275	77,425 14,259 91,684	58,625 62,897 121,522	84 46 130
Coxe Brothers and Co., Incorporated Oneida, Maryd, Coal Co. Maryd, Dodson Coal Co. Morea,	Schuykill	223,237 ..... 218,274 ..... 198,008	31,999 ..... 26,769 ..... 22,743	4,241 ..... 2,217 ..... 932	259,477 ..... 217,230 ..... 221,673	232 ..... 166 ..... 241	475 ..... 475 ..... 485	..... ..... ..... 3	3 ..... 2 ..... .....	81,350 ..... 4,225 ..... 370	109,234 ..... 110,221 ..... 66,425	..... ..... ..... ..... .....	71 ..... 53 ..... 38

TABLE 2—Continued

Names of Operators and Collieries	County	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employees	Number of fatal accidents	Number of non-fatal accidents	Explosives			Number of horses and mules
										Number of pounds of powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used	
Lehigh Valley Coal Co.	Schuylkill, .....	152,027	40,897	810	193,734	214	569	2	11	115,400	21,591	269	63
Buck Mountain,*	Schuylkill, .....	90,498	30,000	4,676	125,174	184	454	4	12	23,293	68,586	.....	43
Alliance, .....	Schuylkill, .....	88,669	14,300	.....	102,969	211	240	.....	2	36,050	14,700	.....	3½
Middle Lehigh, .....	Schuylkill, .....	51,670	3,000	150	54,820	226	97	.....	.....	.....	3,750	.....	3
Schuylkill and Lehigh Coal Co.	Schuylkill, .....	38,290	75	382	38,747	234	106	.....	.....	.....	12,500	.....	6
Brookton, .....	Schuylkill, .....	19,797	8,500	7,629	35,926	223	131	1	.....	.....	4,650	.....	11
Lucy R., .....	Schuylkill, .....	25,122	3,650	535	29,307	222	69	.....	.....	300	3,000	4,000	8
East Lehigh Coal Co.	Schuylkill, .....	18,080	1,500	343	19,923	149	9	.....	.....	.....	16,000	.....	8
Phillips Brothers Coal Co.	Schuylkill, .....	2,320,374	309,161	37,004	2,664,539	.....	6,562	16	56	406,783	939,229	125,791	596
Silver Hill, .....	Schuylkill, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gorman and Campion	Schuylkill, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand totals, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

\*Buck Mountain and Vulcan collieries were combined as Buck Mountain Colliery April 1, and the old breakers torn down. All coal prepared at new breaker after April 1.

TABLE 2.—Part 2

Names of Operators	County	Number of Boilers				Locomotives			Number of steam engines of all classes	Total horse power	Number of pumps delivering water to surface	Capacity in gallons per minute	Quantity delivered to surface per minute—gallons	Number of electric dynamos	Number of air compressors
		Cylindrical	Horse power	Tubular	Horse power	Steam	Air	Electric							
Ledigh and Wilkes-Barre Coal Co., ...	Schuylkill.	20	700	52	5,530	8	1	1	46	6,175	12	19,663	9,145	2	9
Philadelphia and Reading Coal and Iron Co., ...		20	600	22	8,650	15	2	1	59	8,437	6	5,976	1,655	2	9
Conestoga and Co., Incorporated, ...		...	...	23	3,860	5	...	...	20	2,450	1	5,920	3,510	...	...
Maryland Coal Co., ...		...	...	24	3,860	2	...	...	20	2,450	4	4,000	1,300	...	...
Dodson Coal Co., ...		...	...	27	2,255	...	...	5	26	2,400	...	2,000	3,400	1	...
Ledigh Valley Coal Co., ...		...	...	...	2,100	...	3	...	21	2,450	...	2,000	3,000	1	...
Allamore Coal Co., ...		...	...	15	2,100	...	...	...	13	2,115	...	2,350	1,300	...	...
Mill Creek Coal Co., ...		...	...	16	2,500	...	...	...	14	1,500	...	8,000	1,000	...	...
Schuylkill and Ledigh Coal Co., ...		...	...	6	1,400	...	...	...	1	1,400	...	...	300	...	...
Port Carbon Coal Co., ...		...	...	3	600	...	...	2	2	100	...	...	...	2	...
East Ledigh Coal Co., ...		...	...	3	500	2	...	...	10	500	...	...	400	...	...
Phillips Brothers Coal Co., ...		1	90	...	350	...	...	...	5	350	...	...	450	...	...
German and Campion, ...		...	...	...	350	...	...	...	...	350	...	...	...	...	1
Totals, ...	...	41	1,390	191	26,625	34	2	9	218	34,254	40	62,309	26,550	8	19

TABLE 3.—Number of each class of employees inside and outside of mines

Names of Operators	County	Inside										Outside										Grand total inside and outside	
		Mine foremen	Assistant mine foremen	Fire bosses and assistants	Miners	Miners' laborers	Drivers and runners	Doorboys and helpers	Pumpmen	Company men	All other employes	Total inside	Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Slatepickers (boys)	Slatepickers (men)	Bookkeepers and clerks	All other employes	Total outside		
Lehigh and Wilkes-Barre Coal Co.,	Schuylkill,	3	2	4	346	236	56	34	15	278	268	1,242	3	7	45	77	92	2	5	189	420	1,662	
Philadelphia and Reading Coal and Iron Co.,		3	18	....	479	191	68	1	4	148	281	1,193	....	5	20	59	79	31	11	324	529	1,722	
Coxe Brothers and Co., Incorporated,		1	6	....	189	21	21	3	5	12	50	308	....	1	4	25	....	....	3	114	147	465	
Maryd Coal Co.,		1	1	1	124	63	23	3	2	28	56	307	....	1	9	24	24	....	....	3	105	168	475
Douglas Coal Co.,		1	1	1	77	37	30	3	2	6	25	121	....	1	4	35	14	4	....	3	110	182	485
Lehigh Valley Coal Co.,		2	4	3	179	77	30	8	2	17	59	384	....	1	9	24	....	....	3	142	185	569	
Alliance Coal Co.,		....	....	6	74	24	22	1	4	149	67	318	....	1	8	20	....	10	3	63	106	454	
Mill Creek Coal Co.,		1	1	1	55	29	14	1	4	10	4	119	....	1	7	27	10	4	3	68	121	240	
Schuylkill and Lehigh Coal Co.,		1	....	1	25	5	2	1	2	1	....	38	....	1	1	10	4	....	....	41	59	97	
Port Carbon Coal Co.,		....	....	....	43	14	7	1	....	4	13	83	....	1	1	8	5	....	1	10	23	106	
East Lehigh Coal Co.,		1	1	1	25	25	7	1	2	2	9	....	....	1	1	1	7	2	1	38	60	131	
Phillips Brothers Coal Co.,		....	....	1	17	6	4	2	....	1	4	38	....	1	1	1	3	....	1	14	31	69	
Gorman and Campion,		....	1	1	....	33	11	5	....	....	10	2	63	1	1	3	9	....	....	1	18	35	98
Totals,	....	18	33	29	1,666	729	289	58	45	692	925	4,497	13	24	157	320	250	58	38	1,236	2,066	6,563	





TABLE 4.—Fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 9	John Litsconnie, ....	Russian, ...	Laborer, ..	26	M.	1	1	Honey Brook No. 5,	Schenckkill,	Killed by rush of rock in rock hole between Wharton and Mammoth vein, No. 3 chute West Wharton vein, No. 22 slope. Fatally injured by fall of slate off pillar 50 feet from monkey heading in No. 39 breast, West Primrose vein, No. 1 slope. Died same day.
" 21	Phillip Matrolis, ....	Lithuanian, ..	Miner, ....	28	M.	1	....	Eagle Hill, .....		Fatally injured by being caught between top of mine car and low side log on No. 9 slant, 100 feet from face, No. 2 East Lyons vein.
March 14	John Sheads, .....	Polish, .....	Patcher, ..	17	S.	....	....	Honey Brook No. 5,		Smothered by fall of coal from gangway stumps while robbing. He was knocked from the platform and covered with coal between car and rib of gangway. He died before he could be rescued.
" 22	Peter Misavage, ....	Polish, .....	Miner, ....	36	M.	1	4	Morea, .....		Smothered by fall of coal in heading near face of breast.
June 25	William Kopovish, ...	Lithuanian, ..	Miner, ....	31	M.	1	4	Morea, .....		Killed by fall of slate from high side of gangway while making room for a set of timber.
July 31	John Dornellos, .....	Austrian, ..	Laborer, ..	19	S.	....	....	Alliance, .....		Killed by fall of coal off pillar while sitting in the manway.
Aug. 8	John Kraig, .....	Slavonian, ..	Laborer, ..	24	S.	....	....	Eagle Hill, .....		Killed by fall of coal while robbing stumps in East Mammoth gangway.
" 22	Peter Neorivis, ....	Lithuanian, ..	Miner, ....	39	M.	1	3	Morea, .....		Killed by falling down manway, West Top Split vein, No. 16 breast, No. 4 drift.
Sept. 16	Thomas Marzalis, ....	Lithuanian, ..	Miner, ....	45	S.	....	....	Silver Creek, ....		Killed by blast at face of No. 4 West Top Split back switch gangway, Vulcan section.
" 27	Joseph Dohar, .....	Lithuanian, ..	Miner, ....	37	S.	....	....	Pack Mountain, ..		Katona was instantly killed and Kalvitis fatally injured by fall of top coal at face of No. 12 chute, No. 42 counter, West Orchard vein rock plane. Kalvitis died on way to hospital.
Oct. 26	John Kalan, .....	Austrian, ...	Laborer, ..	19	S.	....	....	Alliance, .....	Schenckkill,	
"	Anthony Kalvitis, ..	Lithuanian, ..	Miner, ....	40	S.	....	....	"		



TABLE 5.—Non-fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan.	2 Timko Homanick, .. { Elko Wetuck, ..... { Roland Hasles, .....	Polish, .....	Miner, .....	47	M.	{ Buck Mountain, .....		Hands and face burned by gas. Homanick was preparing to fire a blast in face of West Buck Mountain gangway, No. 5 lift, and he opened his lamp and ignited gas that was at top of gangway. Wetuck was his laborer. Hasles went into the gangway to get gangway car bumped out to a loaded car standing under inside chute.
		Polish, .....	Laborer, .....	27	S.			
		American, ..	Driver, .....	18	S.			
8	Michael Adamones, ..	Hungarian, ..	Miner, .....	30	M.	Alliance, .....		Leg broken by rush of rock from breast. He had drilled a hole in loose rock in the battery and was getting ready to put a charge of powder in it when the rock rushed out and caught his leg against a prop.
Feb.	1 Andrew Colitz, .....	Polish, .....	Miner, .....	40	M.	Anderson No. 4, .....	Schnylkill, ..	Head cut by fall of top coal while robbing pillars.
	3 William Morecavage, ..	Lithuanian, ..	Laborer, .....	25	S.	Alliance, .....		Hands and face burned by gas. He went up to face of breast in search of oil, after men had quit work and ignited gas that had been liberated by shots.
	John Neverdusky, ....	Lithuanian, ..	Miner, .....	35	S.	Alliance, .....		Hands and face burned by gas. He went up to face of breast with naked lamp after being told not to do so by the fireboss, and ignited the gas.
12	John Kradock, .....	Slavonian, ..	Laborer, .....	16	S.	Honey Brook No. 5, ..		Four fingers lacerated. He tripped over a spreader chain when his horse was pulling a loaded truck of ashes out of boiler house. When he fell his hand rested on the rail and the wheel of truck passed over it. Outside.
17	Simon Shenites, .....	Lithuanian, ..	Miner, .....	28	S.	Eagle Hill, .....		Compound fracture of leg. A piece of top coal fell on it while pulling it down with pick at face of breast. Leg had to be amputated.

Feb.	20	Peter Galzura, .....	Slavonian, ..	Laborer, .....	40	M.	Andenried No. 4, .....	Leg bruised by being caught between bumpers of loaded mine cars while coupling them under breaker. Outside.
March	1	Frank Solcopsky, ....	Polish, .....	Miner, .....	44	S.	Eagle Hill, .....	Leg fractured by a piece of dividing slate while in the act of sinking a prop hole. Hands and face burned by gas. He opened his safety lamp at face of blast, and ignited gas liberated by blast.
	5	Charles Barnsavage, .	Lithuanian, ..	Miner, .....	24	S.	Silver Creek, .....	Leg broken by a piece of frozen culm falling on it at Tuscarora culm bank. Outside.
	6	George Peatick, .....	Slavonian, ..	Laborer, .....	51	S.	Maryd, .....	Hip dislocated by being bumped between loaded cars on turnout at bottom of slope.
		John Coats, .....	Polish, .....	Company man, ..	40	M.	Andenried No. 4, .....	Leg broken by being caught between mine car and platform of breast.
	13	Waseł Solena, .....	Slavonian, ..	Laborer, .....	20	S.	Andenried No. 4, .....	Collar bone broken by being caught against manway prop by fall of coal at face of breast.
	16	William Dobranolsky, .	Lithuanian, ..	Miner, .....	48	M.	Alliance, .....	Leg broken by being caught against timber on top of chute by rush of coal from breast battery.
	20	Adam Romingetes, ...	Lithuanian, ..	Miner, .....	43	S.	Alliance, .....	Small finger of hand smashed by being run over by mine car on turnout No. 2 level, West Duck Mountain vein. Hand had to be amputated.
	21	Joseph Davis, .....	American, ..	Driver, .....	22	S.	Puck Mountain, .....	Hands and face slightly burned by gas in top heading at face of No. 6 breast.
	26	Michael Peralis, .....	Lithuanian, ..	Laborer, .....	28	S.	Silver Creek, .....	Bottom fell off safety lamp and ignited gas.
April	7	John T. Boyle, .....	American, ..	Fan engineer, ....	26	S.	Alliance, .....	Small bone of leg broken by being struck by a board from the top of a pile. Outside.
	30	John Matruder, .....	American, ..	Laborer, .....	20	S.	Puck Mountain, .....	Leg broken by being struck by a column pipe that rolled off truck on bottom of No. 3 lift, No. 2 slope.
June	12	John Bearick, .....	Polish, .....	Miner, .....	48	M.	Middle Lehigh, .....	Head and body bruised by fall of top coal while drilling hole in face of breast.
		{ Tony Zelonge, .....	Polish, .....	Miner, .....	33	S.	{ Alliance, .....	Hands and face burned by gas. They were in the act of opening a manway that was blocked with a rush of coal which cut off the ventilation and permitted the gas to accumulate. Zelonge used his naked lamp in doing the work, which ignited the gas.
		{ Leo Gestic, .....	Polish, .....	Miner, .....	40	M.		Hands and face burned by gas. He was driving a heading near face of breast. In lighting a fuse to fire a blast he ignited gas.
	22	Tofo Rasalinsky, .....	Polish, .....	Miner, .....	31	M.	Eagle Hill, .....	Skull fractured by fall of top slate while pulling coal to center of breast to put on sweet iron.
	25	Peter Yoekomoenge, ..	Polish, .....	Miner, .....	38	M.	Alliance, .....	

Schuylkill.



TABLE 5--Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
June 25	Andrew Rabbits, ....	Slavonian, ..	Laborer, .....	45	M.	Honey Brook No. 5, ..	Schuylkill,	Leg bruised by being struck by a piece of rock while robbing down the face of No. 10 North stripping. Outside.
July 2	Dominick Yacobowsky, ..	Lithuanian, ..	Miner, .....	50	M.	Buck Mountain, .....		Leg severely bruised by fall of top slate at face of breast.
10	Elwood Barthel, .....	American, ..	Loader, .....	21	S.	Maryd, .....		Small bone of pelvis broken by being struck by brake iron while running loaded cars from under breaker out to yard. Outside.
13	Dennis McGinley, ....	Irish, .....	Company man, ..	83	M.	Audenried No. 4, .....		Knee cap broken. He stumbled and fell on the rail of track.
28	Howard Mowery, ....	American, ..	Chute boss, .....	25	M.	Honey Brook No. 5, ..		Forehead cut by being struck by a hammer while driving a pin in machinery in breaker. Outside.
Aug. 14	William Maunske, ....	Lithuanian, ..	Miner, .....	50	M.	Silver Creek, .....		Hands and face burned by gas at face of breast.
19	Stanley Williams, ....	Welsh, .....	Driver, .....	17	S.	Buck Mountain, .....		Leg lacerated and collar bone broken by being caught between mine car and over-cast on gangway.
Sept. 3	Joseph Metcavage, ...	Lithuanian, ..	Driver, .....	19	S.	Audenried No. 4, .....		Leg bruised by being caught between mine car and door on gangway.
14	Andrew Kodak, .....	Slavonian, ..	Miner, .....	52	M.	Eagle Hill, .....		Hands and face burned by gas at face of breast. He ignited gas while lighting fuse to fire blast.
18	Michael Kotch, .....	Russian, ...	Laborer, .....	20	S.	Audenried No. 4, .....		Leg fractured by being caught between mine car and timber on gangway.
19	John Moxin, .....	Hungarian, .	Miner, .....	50	M.	Buck Mountain, .....		Leg fractured by fall of rock at face of breast.
23	John Plesky, .....	Lithuanian, ..	Miner, .....	51	M.	Buck Mountain, .....		Leg cut by pick penetrating it at face of breast.
25	Joseph Steranco, ....	Slavonian, ..	Miner, .....	46	M.	Eagle Hill, .....		Leg fractured by a piece of slate that moved from face of breast and struck him.
27	Lewis Wasil, .....	Lithuanian, ..	Miner, .....	60	S.	Buck Mountain, .....		Leg cut by a piece of coal flying from blast 80 feet from face of gangway.

Sept. 27	{ Anthony Peragint, ... { Felix Bengols, ...	Lithuanian, Lithuanian,	Miner, Miner,	..... .....	34 40	M. S.	{ Alliance, .....	Hands and face burned by gas. Peragint went up to face of breast after firing two shots and opened his safety lamp and ignited gas.
28	John Wetting, .....	Hungarian,	Miner,	.....	46	M.	Audenried No. 4, .....	Hand lost and eyes injured. He went back into breast to see what was delaying a blast and it exploded when he reached the face of breast.
Oct. 1	John Tomashipki, ....	Lithuanian,	Miner,	.....	40	M.	Silver Creek, .....	Face and hands cut. In firing a blast at face of breast he cut his squib short and the shot exploded before he could reach a place of safety.
2	John Whalen, .....	Polish, .....	Miner, .....	.....	28	M.	Eagle Hill, .....	Hands and face cut. He was pushing a dynamite cartridge into hole with an iron scraper when it exploded, at face of breast heading.
4	John Prohishoed, ...	Russian, ...	Laborer, ...	.....	34	M.	Honey Brook No. 5, ...	Rib fractured by being struck by a piece of coal that rolled down the slope.
	Joseph Sorando, .....	Italian, .....	Laborer, .....	.....	25	M.	Alliance, .....	Head cut. He was knocked down by a piece of slate that struck him and in falling his head struck low side of gangway.
7	George Sataski, .....	Polish, .....	Company man, ..	.....	37	M.	Audenried No. 4, .....	Leg fractured by being struck by a piece of timber.
24	George Ynnashipki, ...	Lithuanian,	Miner, .....	.....	32	S.	Silver Creek, .....	Hip dislocated. A piece of coal slid from high side of gangway and struck him while tamping hole in face of gangway.
Nov. 4	David Curtin, .....	American, ..	Driver, .....	.....	24	S.	Buck Mountain, .....	Finger smashed. While uncoupling mine cars on gangway the mules started and his fingers were caught.
16	Martin Cardiff, .....	American, ..	Engineer, .....	.....	27	M.	Buck Mountain, .....	Foot bruised by being caught under bumper of locomotive on gangway.
25	{ Tony Tarto, .....	Italian, .....	Miner, .....	.....	26	S.	} Oneida, .....	Hands and face burned by gas. Tartar ignited gas at face of breast with naked light, and the flame of gas ignited by Tartar's lamp came through heading and burned Dunderando.
	{ John Dunderando, ..	Slavonian, ...	Miner, .....	.....	29	M.		Ankle broken by fall of slate at face of chute in center of No. 16 breast pillar.
Dec. 10	Alec Wattick, .....	Polish, .....	Miner, .....	.....	33	S.	Eagle Hill, .....	East Primrose vein, stable drift.
16	Joseph Kennedy, .....	American, ..	Patcher, .....	.....	28	S.	Oneida, .....	Leg severely injured. While running along-side of mine car drawn by locomotive out of No. 6 stripping he fell under wheels of car. Outside.
27	Joseph Cooper, .....	Italian, .....	Patcher, .....	.....	23	S.	Audenried No. 4, .....	Foot bruised. While putting a derailed car on track with a retractor, the wheel slipped off and caught his foot. Outside.

Schuylkill.

## CONDITION OF COLLIERIES

## LEHIGH AND WILKES-BARRE COAL COMPANY

Audenried No. 4 and Honey Brook No. 5 Collieries.—Ventilation, drainage and condition as to safety, good.

## PHILADELPHIA AND READING COAL AND IRON COMPANY

Silver Creek and Eagle Hill Collieries.—Ventilation, drainage and condition as to safety, good.

## COXE BROTHERS AND COMPANY, INCORPORATED

Oneida Colliery.—Ventilation, drainage and condition as to safety, good.

## MARYD COAL COMPANY

Maryd Colliery.—Ventilation and condition as to safety, good. Drainage, fair.

## DODSON COAL COMPANY

Morea Colliery.—Ventilation, drainage and condition as to safety, good.

## LEHIGH VALLEY COAL COMPANY

Buck Mountain Colliery, Buck Mountain and Vulcan Slopes.—Ventilation and condition as to safety, good. Drainage, fair.

## ALLIANCE COAL COMPANY

Alliance Colliery.—Ventilation and drainage, fair. Condition as to safety, good.

## MILL CREEK COAL COMPANY

Middle Lehigh Colliery.—Ventilation and drainage, fair. Condition as to safety, good.

## SCHUYLKILL AND LEHIGH COAL COMPANY

Brockton Colliery.—Ventilation, fair. Drainage poor. Condition as to safety, good.

## EAST LEHIGH COAL COMPANY

East Lehigh Colliery.—Ventilation, fair. Drainage, poor. Condition as to safety, good.

## PHILLIPS BROTHERS COAL COMPANY

Silver Hill Colliery.—Ventilation and drainage, fair. Condition as to safety, good.

## PORT CARBON COAL COMPANY

Lucy R. Colliery.—Ventilation, fair. Drainage, poor. Condition as to safety, good.

## GORMAN AND CAMPION

Bell Colliery.—Ventilation, drainage and condition as to safety, good.

## IMPROVEMENTS

## LEHIGH AND WILKES-BARRE COAL COMPANY

Audenried No. 4 Colliery.—Extended No. 11 slope from basin of Buck Mountain vein to Lykens vein.

Drove tunnel from Gamma vein to Wharton vein, fourth level, No. 4 slope for mule barn.

Honey Brook No. 5 Colliery.—300 H. P. return tubular boiler plant No. 20 Slope.

300 H. P. return tubular boiler plant at Green Mountain slope.

Installed 8 foot exhaust fan at No. 22 Wharton slope.

Erected mule barn outside at Green Mountain slope.

Tunnel driven Lykens to Buck Mountain, Green Mountain water level tunnel.

## PHILADELPHIA AND READING COAL AND IRON COMPANY

Silver Creek Colliery.—The stripping of the Mammoth vein in the Ledger vein basin has advanced sufficiently to allow the mining of coal. A power plane connects the stripping with the locomotive level.

A drift was opened on the Skidmore vein in the Ledger vein basin, connected with the locomotive haulage level by a power plane.

A drift was opened in the Top Split vein to work the coal along the Butler crop.

A concrete hospital was erected in No. 4 drift.

A tunnel was completed from West Buck Mountain gangway, No. 4 drift, to Seven Foot vein.

Electric haulage was installed in No. 4 drift.

A tunnel 10 yards long was driven from Top to Bottom Split of Buck Mountain No. 6 drift.

An automatic arrangement between the foot of No. 1 plane and the bottom of the shaft will soon be finished.

A fireproof stable of concrete and steel is being built in the rock on No. 1 plane level.

No. 1 cross-cut West Middle Split, No. 3 plane level, is being continued south to a local basin in the Top Split; estimated length, 107 yards.

A new concrete hospital, heated and lighted with electricity, was erected at No. 3 plane landing to the air shaft.

Work has been started on an automatic bottom for No. 4 plane extending to the Top Split vein; estimated length, 60 yards.

A tunnel 5 x 6 feet is being driven from the West Holmes gangway to the air shaft, for a traveling way for No. 4 plane level; estimated length, 70 yards.

Air holes mentioned in last year's report, from West Holmes gangway, Cedar Hill basin, have been driven to the surface.

A tunnel is being driven from the East Skidmore, No. 4 plane level gangway at breast No. 33, to the Seven Foot vein; estimated length, 36 yards.

Breast Nos. 11 and 12 West Skidmore, No. 4 plane gangway, are being driven to tap the Windy Harbor water.

No. 5 plane was built in East Middle Split, No. 7 breast, No. 4 plane level. A turnout at the Top is now being opened.

A tunnel is being driven from the Bottom Split of the Mammoth, to the Skidmore, No. 6 plane level; estimated length, 52 yards.



Eagle Hill Colliery.—The Orchard North dip, Orchard South dip haulage tunnel, Primrose North Dip drift, is being continued northward. The Primrose North dip and the Primrose South dip and the Primrose South dip veins have been cut.

The Skidmore Top Split air tunnel, driven south from the East Skidmore monkey heading, between chutes 43 and 44, to the Top Split of the Mammoth vein, a distance of 350 feet, was completed.

A haulage tunnel was driven northward from the West Skidmore gangway, between chutes 4 and 5, to the Seven Foot vein, a distance of 100 feet.

A pump room was driven on the sixth lift in rock 119 feet long, 20 feet wide and 15 feet, 6 inches high. This room has been connected to the sixth lift shaft landing by means of a pipe hole 30 feet long, 8 feet high, 6 feet 6 inches wide. The pump room and pipe hole have been concreted. A sump shaft 11 feet 8 inches by 8 feet was sunk 12 feet deep in the centre of the pump house and concreted. A sump opening, 6 feet wide and 6 feet high, is being driven east 120 feet in the Four Foot vein, thence north for 570 feet through rock to Skidmore vein, cutting the Mammoth vein in two splits.

A stable 200 feet long, 13 feet wide, was driven west from the main tunnel, sixth lift in Seven Foot vein, and is now being finished in concrete.

A steel head frame was erected at top of coal shaft.

A mechanical arrangement for handling empty cars was installed between top of coal shaft and top of plane.

#### COXE BROTHERS AND COMPANY, INCORPORATED

Oneida Colliery.—Outside: A 4-inch water line was put in from No. 2 boiler house to No. 3 boiler house.

A 4-inch water line for fire protection was laid to the car shop.

An electric sub-station was erected at No. 5 slope.

A new steam shovel was installed at No. 6 stripping for the purpose of loading coal.

Removed 106,181 cubic yards of cover from No. 6 stripping, making a total of 426,486 cubic yards up to January 1, 1913.

Inside: A rock tunnel was driven from Lower to Upper Gamma at No. 3 slope.

A rock tunnel 103 feet long was driven from the Gamma to the Mammoth vein at No. 3 slope. A plane and turnouts were driven to this tunnel and are now being graded.

Concrete mule stables were built in Nos. 1 and 3 slopes, and concrete emergency hospitals in Nos. 3, 4 and 5 slopes.

Concrete locomotive house was built in No. 4 slope; and concrete pump house in No. 1 slope, No. 18 East dip.

A drainage tunnel, to be 7,027 feet long, is being driven from the surface and from No. 8 West Buck Mountain gangway, No. 5 Slope, to drain the South basin. Up to January 1, 1913, 2,039 feet had been driven from the surface end and 1,696 feet from No. 5 slope end.

#### MARYD COAL COMPANY

Maryd Colliery.—Inside: Tunnel 643 feet long driven in shaft, first level. Tunnel 770 feet long driven in Shaft, second level. 739 feet rock gangway driven in Skidmore vein, No. 1 slope. Basin to tap water in Donahue slope workings.



Outside: Erected 50,000 gallon storage tank for boiler feed water. Installed 2,500 H. P. Cochran feed water heater. Erected corrugated iron pump and fan house at main boiler plant.

#### DODSON COAL COMPANY

Morea Colliery.—Breaker: The breaker was completely overhauled, and placed in first-class condition.

A double engine, 14 by 24 inches, was installed to handle the rock coming from the breaker.

Outside: Added to the Mammoth rock and clay stripping operations, one 70-ton Bucyrus steam shovel, two locomotives, and an air compressor, to drill rock in stripping.

A centrally located plant was installed to pump water from deep well holes with Drake air lifts; all pipes having been placed a safe distance below frost limits.

The Mammoth flume, 2,000 feet long, running parallel with the basin was completely overhauled. A new flume 4 by 8 feet by 1,700 feet long was installed at the western end of the property.

A new creek channel, 16 by 8 feet by 3,300 feet long, is two-thirds completed, removing the old channel from the centre of the basin, and placed back of the South dip, Buck Mountain crops.

A new telephone line 4,000 feet long, connecting No. 4 slope with the colliery lines, was erected.

Slope: An air compressor was installed at the shaft, 22-inch intake 22.5-inch air, 22-inch steam, 24-inch stroke, to pump the water from No. 4 inside slope.

An 18-foot fan was removed from Mammoth vein and placed at the west end of Seven Foot vein.

The bottom at the Big Slope has undergone a complete change. An empty car chain hoist was installed, all tracks reggraded, and a P. and R. automatic tip put in to dump the cars in the gunboat.

A new concrete hospital, 12 by 12 feet was built, equipped with electric lights, steam heat and hot and cold water.

A tunnel 90 feet long was driven on the first level, West Seven Foot vein, South dip, to cut the Mammoth vein.

5,000 feet of Seven Foot gangway was fitted up with heavy rails and modern electric haulage.

A rock hole 80 feet long, on 25 degrees, was driven to cut the Mammoth vein.

A tunnel 100 feet long from the Buck Mountain to Seven Foot vein is one-half completed.

The second level Seven Foot gangway east was reopened 1,500 feet, heavy rails laid, and equipped with modern electric haulage; also tunnel 70 feet long from the Seven Foot to the Mammoth vein reopened and electric haulage installed.

A rock hole 7 by 12 feet—150 feet long, on 30 degrees, to serve as a return for ventilating No. 4 Slope and back basin of Seven Foot; also as drainage for the Seven Foot back basin, is nearly completed.

#### LEHIGH VALLEY COAL COMPANY

Buck Mountain Colliery.—Vulcan Slope: The Old breaker was removed and a backswitch landing put in to land the coal on the level of the lokie road to the Buck Mountain breaker.

The timber was removed and concrete walls and reinforced concrete top placed in the mouth of the slope from the surface to the beginning of the vein.

A 14 by 7 by 18 inch single Goyne pump was installed on the sixth level to pump the water from the lower levels to the fourth level waterway.

A tunnel was started on the fifth level to be driven from the Skidmore North dip to the Buck Mountain South dip.

The concrete and steel mule barns on the second, fourth and fifth levels were completed.

Buck Mountain Slope: The concrete and steel mule barn on the fourth level was completed, and new muleways made between the different levels. All the old barns have been torn out.

The timber was removed and concrete side walls and reinforced concrete top were placed in the mouth of No. 3 slope from the surface to the beginning of the vein. Steel timber was put in from the end of the concrete to the solid roof.

The 18 and 27 and 42 by 14 by 36 inch triple expansion duplex plunger Goyne pumps were started in March.

Outside: The old breaker at No. 1 slope was removed and a back-switch landing is being made to land the coal on the level of the lokie road to the Buck Mountain breaker.

No. 3 slope track was extended and cars are being landed on level of breaker tracks.

The No. 3 slope engine house was removed and the engines installed in a new tile and steel engine house near the breaker.

The No. 1 slope engine house was removed and a new 38 by 28 tile and steel engine house 38 by 28 feet, built north of the Lehigh Valley Railroad track. The engines were repaired and removed to the new engine house.

A tile and steel mule barn, 60 by 20 feet, and a harness room and garage, 24 feet 10 inches by 20 feet 4 inches, were built.

The 20 by 24 by 14½ and 5 inch three-stage Norwalk air compressor was repaired and removed from No. 2 slope and installed in a 47½ by 13 foot addition to the compressor and locomotive house.

Two planes were built, one at Buck Mountain, No. 1 slope, and one at Vulcan, to handle the coal from the mouth of the slope to the level of the lokie road, while the old breakers were being removed.

The new breaker was started March 25.

#### ALLIANCE COAL COMPANY

Alliance Colliery.—Outside: Two miles of 6-inch fresh water line from colliery to stock dam at Silver Creek.

Concrete carpenter and smith shop, 64 by 22 feet.

Combined office and supply house, 70 by 22 feet.

25,000 gallon fresh water tank erected for boiler supply.

Boilers retubed, new fronts erected and brick works renewed; also 15 steam blowers installed.

Extensive repairs made to dwellings in patch.

360 foot scraper line for conveying fuel from breaker to boiler house.

Installed Ingersoll-Rand air compressor, 24 by 27, 27½ by 27 inches; and erected frame engine house for same. Installed 300 feet of 8-inch steam line from boilers to compressor.

1,700 feet of 3-inch air line from compressor to Northdale water level.

Inside: Rock hole, 52 feet long, driven from No. 3 breast, East Skidmore water level, to Bottom Split of Mammoth vein.

Tunnel, 93 feet long, driven from East Skidmore gangway counter level, north basin, to Bottom Bench.

Tunnel, 56 feet long, driven from West Skidmore gangway counter level north basin, Northdale to Bottom Bench.

Rock hole, 57 feet long, driven from West Skidmore counter level to Bottom Bench vein.

Tunnel, 56 feet long, driven from East Seven Foot shaft level Northdale tunnel, to East Skidmore gangway, for haulageway.

Balance plane across pitch from East Skidmore gangway north basin, Northdale tunnel, driven 240 feet.

Tunnel east of No. 1 shaft driven 68 feet from Bottom Bench to Skidmore vein. Stable in No. 1 shaft level was reconstructed with steel and the ribs walled with concrete, making it fireproof.

1,950 feet of 3-inch pipe, also 7,450 feet of 2-inch pipe, installed for air lines for rock work.

#### MILL CREEK COAL COMPANY

Middle Lehigh Colliery.—Installed a Goyne pump, 24 by 10 by 36 inches, at first level and column line to surface; also Goyne pump, 28 by 10 by 36 inches, at second level and column line to surface.

Pumpway driven in Seven Foot vein from second level to surface, 750 feet.

#### MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held April 1 and 2, in Union Hall, Pottsville. The Board of Examiners was composed of the following persons:

John Curran, Mine Inspector, Pottsville; James Tinley, Superintendent, Tamaqua; William J. Brennan, Miner, Port Carbon; Luke Stiles, Miner, Cumbola.

The following applicants passed a satisfactory examination and were granted certificates:

#### MINE FOREMEN

John McGovern, New Philadelphia; William Murrey, Port Carbon; Charles M. Schellhammer, Edward M. Richards, Coaldale; Charles J. McGlynn, Morea.

#### ASSISTANT MINE FOREMEN

Benjamin J. Thomas, Coaldale; Peter Haggerty, Tamaqua; Robert Davidson, Brockton; James L. Haggerty, Jerome McNelis, Maryd; Harry Houser, Seek; James E. McFadden, McAdoo; Patrick T. Large, Edward L. Kane, Tuscarora; Patrick F. McCall, Cumbola; Elmer Blackwell, Middleport; Charles A. Shields, Patrick J. McLaughlin, Kaska.



## NINETEENTH DISTRICT

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SCHUYLKILL COUNTY

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Pottsville, Pa., February 18, 1913.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor of transmitting herewith my Annual Report as Inspector of Mines of the Nineteenth Anthracite District for the year ending December 31, 1912.

Respectfully submitted,

MICHAEL J. BRENNAN,  
Inspector.



## SUMMARY OF STATISTICS

Number of collieries, .....	18
Number of mines, .....	50
Number of mines in operation, .....	50
Number of tons of coal shipped to market, .....	2,630,657
Number of tons used at mines for steam and heat, .....	461,439
Number of tons sold to local trade and used by employes, .....	37,671
Number of tons produced, .....	3,129,767
Number of tons produced by compressed air machines, ..	.....
Number of tons produced by electrical machines, .....	.....
Number of persons employed inside of mines, .....	5,078
Number of persons employed outside, .....	2,437
Number of fatal accidents inside of mines, .....	27
Number of fatal accidents outside, .....	7
Number of non-fatal accidents inside of mines, .....	42
Number of non-fatal accidents outside, .....	8
Number of tons of coal produced per fatal accident inside, .....	115,917
Number of tons produced per fatal accident outside, ....	447,109
Number of tons produced per fatal accident inside and outside, .....	92,052
Number of persons employed per fatal accident inside, ..	188
Number of persons employed per fatal accident outside, .	348
Number of persons employed per fatal accident inside and outside, .....	221
Number of persons employed per non-fatal accident inside, .....	121
Number of persons employed per non-fatal accident outside, .....	305
Number of persons employed per non-fatal accident inside and outside, .....	150
Number of wives made widows, .....	13
Number of children made orphans, .....	23
Number of steam locomotives used inside of mines, .....	2
Number of steam locomotives used outside, .....	34
Number of compressed air locomotives used inside, .....	1
Number of compressed air locomotives used outside, ....	.....
Number of electric motors used inside, .....	14
Number of electric motors used outside, .....	.....
Number of fans in use, .....	41
Number of furnaces in use, .....	.....
Number of gaseous mines in operation, .....	33
Number of non-gaseous mines in operation, .....	17
Number of new mines opened, .....	3
Number of old mines abandoned, .....	2

TABLE A  
PRODUCTION OF COAL

Names of Operators	Tons
Philadelphia and Reading Coal and Iron Company, . . . . .	1,373,354
St. Clair Coal Company, . . . . .	384,840
Lytle Coal Company, . . . . .	338,437
Pine Hill Coal Company, . . . . .	278,390
Oak Hill Coal Company, . . . . .	262,160
Buck Run Coal Company, . . . . .	205,869
Darkwater Coal Company, . . . . .	101,251
Mt. Hope Coal Company, . . . . .	64,002
White and Company, . . . . .	40,139
Wolf Creek Coal Company, . . . . .	30,724
John H. Davis Coal Company, . . . . .	29,849
Butcher Creek Coal Company, . . . . .	17,742
Scott Estate, . . . . .	3,010
Total, . . . . .	3,129,767

Production by Counties

Schuylkill, . . . . .	3,129,767
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TABLE B—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employees inside	Number of employees outside	Total number of employees	Number of employees inside per fatal accident	Number of employees outside per fatal accident	Number of employees inside per non-fatal accident	Number of employees outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Philadelphia and Reading Coal and Iron Co.,	9	5	14	21	5	26	152,595	65,398	2,280	1,160	3,440	253	282	109	232
St. Clair Coal Co.,	1	1	2	14	1	15	384,840	431	431	654	654	431	223	41	229
Lyle Coal Co.,	2	1	3	2	1	3	169,218	24,174	574	229	803	287	287	266	266
Pine Hill Coal Co.,	2	1	3	2	1	3	139,195	131,080	524	170	694	262	170	160	160
Oak Hill Coal Co.,	8	1	9	2	1	3	32,770	102,431	532	218	750	66	100	100	83
Black Run Coal Co.,	2	1	3	2	1	3	102,431	102,431	321	122	443	100	130	100	100
Parkwater Coal Co.,	1	1	2	1	1	2	101,253	64,002	130	83	213	130	100	100	47
Mr. Hepe Coal Co.,	2	1	3	2	1	3	40,139	20,069	100	90	190	55	157	55	55
White and Co.,	2	1	3	2	1	3	40,139	20,069	110	47	157	55	157	55	55
Miscellaneous Companies,	2	1	3	2	1	3	40,139	20,069	76	95	171	188	348	121	305
Totals and averages for district.	27	7	34	42	8	50	115,917	74,518	5,078	2,437	7,515	188	348	121	305

TABLE C.—Classification of Fatal Accidents Inside and Outside of Mines

	Months												Totals	Percentages
	January	February	March	April	May	June	July	August	September	October	November	December		
<b>Causes of Accidents Inside</b>														
Falls of coal, .....	2	1	.....	.....	.....	.....	1	.....	1	.....	.....	.....	5	18.52
Falls of slate, .....	2	.....	.....	.....	.....	1	1	1	1	2	1	.....	11	40.74
Falls of roof, .....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	3.71
Mine cars, .....	.....	.....	.....	.....	1	1	.....	.....	1	.....	.....	1	1	11.11
Suffocation by gas, etc.	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	3.71
Blasts, premature and otherwise, .....	.....	.....	.....	.....	.....	.....	1	.....	.....	1	.....	.....	1	3.71
Mules, .....	.....	.....	.....	.....	.....	.....	1	.....	.....	1	.....	.....	1	3.70
Struck by drill, .....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1	3.70
Rush of clay, .....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	3.70
Rush of gob, .....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	3.70
Struck by timber, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	3.70
<b>Totals, .....</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>.....</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>1</b>	<b>6</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>27</b>	<b>100.00</b>
<b>Causes of Accidents Outside</b>														
Cars, .....	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....	.....	2	28.57
Machinery, .....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	57.14
Struck by lever, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	14.29
<b>Totals, .....</b>	<b>.....</b>	<b>1</b>	<b>1</b>	<b>.....</b>	<b>.....</b>	<b>1</b>	<b>1</b>	<b>.....</b>	<b>1</b>	<b>.....</b>	<b>.....</b>	<b>2</b>	<b>7</b>	<b>100.00</b>
<b>Grand totals inside and outside, .....</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>.....</b>	<b>1</b>	<b>4</b>	<b>5</b>	<b>1</b>	<b>7</b>	<b>3</b>	<b>1</b>	<b>4</b>	<b>34</b>	<b>.....</b>

TABLE D.—Classification of Non-Fatal Accidents Inside and Outside of Mines

	Months												Totals	Percentages
	January	February	March	April	May	June	July	August	September	October	November	December		
<b>Causes of Accidents Inside</b>														
Falls of coal, .....	1	.....	.....	.....	.....	3	1	.....	1	1	.....	1	8	19.05
Falls of slate, .....	.....	.....	.....	.....	.....	1	1	1	.....	.....	.....	.....	3	7.15
Falls of roof, .....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	2	4.76
Mine cars, .....	.....	1	1	.....	.....	2	1	.....	.....	1	.....	.....	6	14.29
Explosions of gas, .....	1	3	1	.....	1	2	1	.....	2	.....	2	.....	13	30.95
Blasts, premature and otherwise, .....	1	.....	.....	.....	.....	1	.....	.....	.....	1	.....	.....	3	7.14
Mules, .....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	.....	1	2.38
Struck by piece of coal, .....	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	7.14
Struck by timber, .....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	.....	.....	2	4.76
Rush of slate, .....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	2.38
<b>Totals, .....</b>	<b>5</b>	<b>6</b>	<b>2</b>	<b>.....</b>	<b>1</b>	<b>10</b>	<b>4</b>	<b>1</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>1</b>	<b>42</b>	<b>100.00</b>
<b>Causes of Accidents Outside</b>														
Cars, .....	1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	37.50
Machinery, .....	1	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	3	37.50
By falling, .....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	12.50
Struck by timber, .....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	12.50
<b>Totals, .....</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>.....</b>	<b>1</b>	<b>.....</b>	<b>.....</b>	<b>1</b>	<b>.....</b>	<b>1</b>	<b>.....</b>	<b>.....</b>	<b>8</b>	<b>100.00</b>
<b>Grand totals inside and outside, .....</b>	<b>7</b>	<b>7</b>	<b>4</b>	<b>.....</b>	<b>2</b>	<b>10</b>	<b>4</b>	<b>2</b>	<b>5</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>50</b>	<b>.....</b>

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Miners, .....	3	1	1	....	....	1	3	1	3	....	1	1	15
Miners' laborers, .....	1	....	....	....	....	1	....	....	1	....	....	....	5
Drivers and runners, .....	....	....	....	....	1	1	....	....	2	1	....	....	5
Loader bosses, .....	....	....	....	....	....	....	....	....	....	....	....	1	1
Starters, .....	....	....	....	....	....	....	1	....	....	....	....	....	1
Totals, .....	4	1	1	....	1	3	4	1	6	3	1	2	27
Outside													
Laborers, .....	....	1	....	....	....	....	1	....	1	....	....	....	3
Oilers, .....	....	....	1	....	....	....	....	....	1	....	....	....	1
Repairmen, .....	....	....	....	....	....	1	....	....	....	....	....	....	1
Jig runners, .....	....	....	....	....	....	....	....	....	....	....	....	1	1
Scraper tenders, .....	....	....	....	....	....	....	....	....	....	....	....	1	1
Totals, .....	....	1	1	....	....	1	1	....	1	....	....	2	7
Grand totals inside and outside, .....	4	2	2	....	1	4	5	1	7	3	1	4	34

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
Inside													
Miners, .....	3	5	1	....	1	5	3	....	5	3	2	1	29
Miners' laborers, .....	3	....	....	....	....	3	1	1	....	....	....	....	7
Drivers and runners, .....	....	1	1	....	....	1	....	....	....	1	1	....	5
Couplers, .....	....	....	....	....	....	1	....	....	....	....	....	....	1
Totals, .....	5	6	2	....	1	10	4	1	5	4	3	1	42
Outside													
Slatepickers (boys), .....	....	....	1	....	....	....	....	....	....	....	....	....	1
Patchers, .....	1	....	....	....	....	....	....	....	....	....	....	....	1
Jig runners, .....	1	....	....	....	....	....	....	....	....	....	....	....	1
Switchmen, .....	....	1	....	....	....	....	....	....	....	....	....	....	1
Miners, .....	....	....	1	....	....	....	....	....	....	....	....	....	1
Ashmen, .....	....	....	....	....	1	....	....	....	....	....	....	....	1
Laborers, .....	....	....	....	....	....	....	....	1	....	....	....	....	1
Feeders, .....	....	....	....	....	....	....	....	....	....	1	....	....	1
Totals, .....	2	1	2	....	1	....	....	1	....	1	....	....	8
Grand totals inside and outside, .....	7	7	4	....	2	10	4	2	5	5	3	1	50



TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months										
	January	February	March	April	May	June	July	August	September	October	Totals
American, .....	1	.....	2	.....	.....	2	1	.....	2	1	11
Polish, .....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	2
Hungarian, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1
Italian, .....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Slavonian, .....	1	1	.....	.....	.....	1	1	.....	1	.....	5
Lithuanian, .....	1	.....	.....	.....	1	1	2	.....	2	1	10
Russian, .....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
Greek, .....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	3
Totals, .....	4	2	2	.....	1	4	5	1	7	3	34

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months										
	January	February	March	April	May	June	July	August	September	October	Totals
American, .....	3	2	1	.....	.....	2	.....	1	1	.....	12
English, .....	.....	.....	.....	.....	.....	1	.....	.....	1	.....	1
Welsh, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
German, .....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Polish, .....	.....	1	.....	.....	1	.....	2	.....	.....	.....	4
Italian, .....	1	.....	.....	.....	.....	2	.....	1	.....	.....	4
Slavonian, .....	.....	2	2	.....	.....	2	.....	.....	.....	.....	5
Lithuanian, .....	3	.....	2	.....	.....	3	1	.....	1	1	12
Austrian, .....	.....	.....	1	.....	.....	.....	1	.....	1	.....	3
Russian, .....	.....	1	.....	.....	1	.....	.....	.....	2	1	5
Greek, .....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1
Tyrolean, .....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Totals, .....	7	7	4	.....	2	10	4	2	5	5	50

TABLE I.—Operators and mines, kind of openings, type and size of fans, size of furnaces, volume of air produced by fan or furnace per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	Kind of opening	Gaseous or non-gaseous	Method of ventilation	Diameter of fan in feet and inches	Width of blades in feet and inches	Depth of blades in feet and inches	Number of revolutions per minute	Water gauge developed—in inches	Name of fan	Power used	Number of splits of air currents	Number of cubic feet of air per minute entering the mine at inlet	Total number of cubic feet of air per minute circulating in all the splits	Number of cubic feet of air per minute passing out at outlet	Number of persons employed inside
Philadelphia and Reading Coal and Iron Co.															
Wadesville Colliery:															
Wadesville, .....	Shaft, .....	Gaseous, ..	Fan, .....	21	7.0	6.0	73	1.4	{ Guibal, ..	Steam, ....	7	52,565	44,155	61,456	84
Wadesville, .....	Shaft, .....	Gaseous, ..	Fan, .....	21	7.0	6.0	73	1.4	{ Guibal, ..	Steam, ....	8	48,990	41,190	51,113	232
Wadesville, .....	Slope, .....	Gaseous, ..	Fan, .....	15	5.0	3.6	122	.5	{ Guibal, ..	Steam, ....	2	12,144	11,355	13,040	42
Wadesville, .....	Slope, .....	Non-gas, ..	Fan, .....	8	3.0	2.4	87	.4	{ Guibal, ..	Steam, ....	5	17,540	14,760	17,030	43
Wadesville, .....	Slope, .....	Non-gas, ..	Fan, .....	8	3.0	2.4	87	.4	{ Guibal, ..	Steam, ....	3	15,895	13,105	16,245	15
Pine Knot Colliery:															
Pine Knot, .....	Shaft, .....	Gaseous, }	Fan, .....	21	7.0	6.0	58	1.1	Guibal, ..	Steam, ....	16	45,660	31,840	54,930	151
Pine Knot, .....	Shaft, .....	Gaseous, }	Fan, .....	21	7.0	6.0	58	1.1	Guibal, ..	Steam, ....	16	45,660	31,840	54,930	151
Otto Colliery:															
Otto, .....	Shaft, .....	Gaseous, ..	Fan, .....	21	7.0	6.0	84	.2	Guibal, ..	Steam, ....	10	96,378	40,600	102,072	158
Otto, .....	Drift, .....	Gaseous, ..	Fans, ..	13	6.0	3.6	63	.7	Guibal, ..	Steam, ....	2	26,910	15,600	27,424	42
Otto, .....	Drift, .....	Non-gas, ..	Fan, .....	13	5.0	3.6	90	1.1	Guibal, ..	Steam, ....	7	70,290	30,510	72,110	136
Otto, .....	Drift, .....	Non-gas, ..	Fan, .....	13	4.2	3.6	86	1.0	Guibal, ..	Steam, ....	7	70,290	30,510	72,110	136
Phoenix Park Colliery:															
Phoenix Park, .....	Slope, .....	Gaseous, ..	Fan, .....	21	7.0	6.0	80	1.8	Guibal, ..	Steam, ....	9	77,160	47,170	83,540	131
Phoenix Park, .....	Slope, .....	Gaseous, ..	Fan, .....	21	7.0	6.0	80	1.8	Guibal, ..	Steam, ....	9	77,160	47,170	83,540	131
Phoenix Park, .....	Slope, .....	Gaseous, ..	Fan, .....	15	5.0	3.6	90	1.4	Guibal, ..	Steam, ....	5	14,500	8,650	17,640	20
Phoenix Park, .....	Slope, .....	Gaseous, ..	Fan, .....	15	5.0	3.6	90	1.4	Guibal, ..	Steam, ....	5	38,360	16,735	40,489	62
Phoenix Park, .....	Slope, .....	Gaseous, ..	Fan, .....	15	5.0	3.6	60	.5	Guibal, ..	Steam, ....	3	29,450	23,100	40,460	76
Glendower Colliery:															
Glendower, .....	Slope, .....	Gaseous, ..	Fan, .....	21	6.0	5.6	80	1.8	Guibal, ..	Steam, ....	8	82,100	41,200	83,810	89
Glendower, .....	Slope, .....	Gaseous, ..	Fan, .....	18	5.6	4.6	76	.8	Guibal, ..	Steam, ....	4	81,800	45,580	85,200	103
Glendower, .....	Drift, .....	Non-gas, ..	Fan, .....	15	5.0	3.6	48	.4	Guibal, ..	Electricity, ..	9	39,300	13,520	39,200	35
John Veith Colliery:															
John Veith, .....	Shaft, .....	Gaseous, ..	Fan, .....	15	5.0	4.6	74	.5	Guibal, ..	Steam, ....	8	28,870	15,925	29,310	42
John Veith, .....	Shaft, .....	Gaseous, ..	Fan, .....	15	5.0	4.6	70	.4	Guibal, ..	Steam, ....	9	44,420	20,100	44,898	40



TABLE I--Continued

Names of Operators and Mines	Number of persons employed inside	44	23	9
	Number of cubic feet of air per minute passing out at outlet	7,500	.....	.....
	Total number of cubic feet of air per minute circulating in all the splits	4,000	.....	.....
	Number of cubic feet of air per minute entering the mine at inlet	6,000	.....	.....
	Number of splits of air currents	1	.....	.....
	Power used	Steam, .....	.....	.....
	Name of fan	Gulbal, ....	.....	.....
	Water gauge developed—in inches	.5	.....	.....
	Number of revolutions per minute	65	.....	.....
	Depth of blades in feet and inches	1.1	.....	.....
	Width of blades in feet and inches	1.8	.....	.....
	Diameter of fan in feet and inches	6	.....	.....
	Method of ventilation	Fan, .....	} Natural,	Natural, ..
	Gaseous or non-gaseous	Non-gas, ..	Non-gas, .. Non-gas, ..	Non-gas, ..
	Kind of opening	Slope, .....	Drift, .... Slope, .....	Slope, ... } Drift, ... }
John H. Davis Coal Co. Ellsworth Colliery: Ellsworth, .....				
Butcher Creek Coal Co. Laurel Run Colliery: Laurel Run, .....				
Laurel Run, .....				
Scott Estate Black Heath Colliery: Black Heath, .....				
Black Heath, .....				

TABLE 1.—Operators, location of collieries, railroads, etc

Names of Operators and Collieries	County	Name of General Superintendent	Post Office	Name of Superintendent	Post Office	Railroad to Mine
Philadelphia and Reading Coal and Iron Co.						
Wadesville, .....						
Pine Knot, .....						
Otto, .....						
Phoenix Park, .....						
Glendower, .....						
John Veith, .....						
Thornaston, .....						
Anchor Washery, .....						
St. Clair Coal Co.						
St. Clair, .....	Schuylkill, .....	W. J. Richards, .....	Pottsville, .....	Reese Tasker, .....	Pottsville, .....	Philadelphia and Reading
St. Clair Coal Co.	Schuylkill, .....	W. T. Smythe, .....	St. Clair, .....	.....	.....	Philadelphia and Reading
Lytle Coal Co.	Schuylkill, .....	Robert A. Quin, .....	Wilkes-Barre, .....	David V. Randall, ...	Minersville, .....	Pennsylvania
Pine Hill Coal Co.	Schuylkill, .....	George M. Keiser, ...	Minersville, .....	George M. Keiser, ...	Minersville, .....	Pennsylvania
Pine Hill, .....	Schuylkill, .....	.....	.....	George Jeffry, .....	Duncott, .....	Philadelphia and Reading
Oak Hill Coal Co.	Schuylkill, .....	.....	.....	John Conway, .....	Minersville, .....	Philadelphia and Reading
Buck Run Coal Co.	Schuylkill, .....	.....	.....	John Conway, .....	Minersville, .....	Pennsylvania
Buck Run, .....	Schuylkill, .....	.....	.....	.....	.....	.....
Darkwater Coal Co.	Schuylkill, .....	.....	.....	.....	.....	.....
Newcastle, .....	Schuylkill, .....	.....	.....	.....	.....	.....
Mt. Hope Coal Co.	Schuylkill, .....	I. D. Beahm, .....	St. Clair, .....	.....	.....	Philadelphia and Reading
Mt. Hope, .....	Schuylkill, .....	.....	.....	.....	.....	.....
White and Co.	Schuylkill, .....	Richard White, .....	Pottsville, .....	.....	.....	Philadelphia and Reading
Wolf Creek Coal Co.	Schuylkill, .....	George M. Keiser, ...	Minersville, .....	.....	.....	Philadelphia and Reading
Wolf Creek Washery, .....	Schuylkill, .....	.....	.....	.....	.....	.....



TABLE 1—Continued

Names of Operators and Collieries	County	Name of General Superintendent	Post Office	Name of Superintendent	Post Office	Railroad to Mine
John H. Davis Coal Co. Ellsworth, .....	Schuylkill, .....	John H. Davis, .....	St. Clair, .....	.....	.....	Philadelphia and Reading
Butcher Creek Coal Co. Laurel Run, .....	Schuylkill, .....	L. J. Whims, .....	St. Clair, .....	.....	.....	Philadelphia and Reading
Scott Estate Black Heath, .....	Schuylkill, .....	.....	.....	James Scott, .....	Minersville, .....	Philadelphia and Reading

TABLE 2.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured, quantity of powder, dynamite and permissible explosives used, etc.

Names of Operators and Collieries	County	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives			Number of horses and mules
										Number of pounds of powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used	
Philadelphia and Reading Coal and Iron Co.	{ Schuylkill, ... }	376,213	32,438	2,833	311,484	253	727	.....	10	19,070	21,133	58,812	52
Wadesville, .....		251,196	43,782	926	295,904	254	574	5	1	21,875	138,947	26,925	59
Pine Knot, .....		227,910	63,395	2,022	293,327	252	761	3	7	13,650	47,998	53,562	94
Otto, .....		174,791	32,563	2,122	209,476	253	558	4	2	3,325	8,363	63,749	69
Phoenix Park, .....		160,676	19,617	.....	180,293	250	336	2	2	4,700	68,172	7,291	40
Glendower,* .....		40,789	175	.....	40,964	.....	172	.....	1	.....	8,563	21,750	15
John Verth,* .....		.....	.....	.....	.....	.....	250	.....	3	.....	.....	.....	.....
Thomasston,f .....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Anchor Washery, .....	Schuylkill,	1,131,575	191,970	7,903	1,331,448	.....	3,378	14	26	62,600	293,176	232,089	329
Totals, .....	.....	39,882	2,024	.....	41,906	86	62	.....	.....	.....	1,340	100	.....
St. Clair, .....	St. Clair Coal Co.	1,171,457	193,994	7,903	1,373,351	.....	3,410	14	26	62,600	294,526	232,189	329
Lytle, .....	Lytle Coal Co.	312,121	63,000	9,719	381,840	231	654	2	.....	211,875	38,000	.....	48
Pine Hill, .....	Pine Hill Coal Co.	233,840	74,450	10,147	338,437	218	803	2	15	.....	118,471	.....	73
.....	Schuylkill, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Schuylkill, .....	241,487	32,850	1,053	275,390	247	684	3	.....	63,750	45,030	32,050	30

\*Coal prepared at Pine Knot breaker.

†Coal prepared at Otto.

TABLE 2--Continued

Names of Operators and Collieries	County	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employees	Total production of coal in tons	Number of days worked	Number of employees	Number of fatal accidents	Number of non-fatal accidents	Explosives	Number of horses and mules
										Number of pounds of permissible explosives used	
										Number of pounds of dynamite used	
										Number of pounds of powder used	
Oak Hill Coal Co.	Schuykill, .....	236,462	33,000	2,638	262,160	230	750	8	2	40,625	51
Buck Run Coal Co.	Schuykill, .....	179,572	25,500	797	205,869	237	443	2	2	39,675	29
Darkwater Coal Co.	Schuykill, .....	85,427	15,000	824	101,251	232	213	1	1	75	15
Mt. Hope Coal Co.	Schuykill, .....	57,413	5,100	1,489	64,002	219	190	.....	1	1,000	11
Howard, .....	Schuykill, .....	32,303	7,500	236	40,139	236	157	2	3	2,000	13
Wolf Creek Coal Co.	Schuykill, .....	27,979	2,745	.....	30,724	183	18	.....	.....	.....	.....
Ellsworth, .....	Schuykill, .....	25,757	3,800	292	29,849	253	93	.....	.....	.....	6
Butcher Creek Coal Co.	Schuykill, .....	13,135	4,500	107	17,742	187	49	.....	.....	.....	5
Black Heath, .....	Schuykill, .....	704	.....	2,306	3,010	272	11	.....	.....	.....	2
Grand totals, .....	.....	2,630,657	461,439	37,671	3,129,767	.....	7,515	34	50	421,600	611

TABLE 2. —Part 2

Names of Operators	County	Number of Boilers				Locomotives			Number of steam engines of all classes	Total horse power	Number of pumps delivering water to surface	Capacity in gallons per minute	Quantity delivered to surface per minute—gallons	Number of electric dynamos	Number of air compressors
		Cylindrical	Horse power	Tubular	Total horse power	Steam	Air	Electric							
Philadelphia and Reading Coal and Iron Co., .....	Schuylkill	.....	.....	71	12,330	16	1	.....	213	27,842	20	20,730	9,512	1	8
St. Clair Coal Co., .....		.....	3,100	20	3,100	6	.....	.....	21	7,287	1	1,500	.....	4	.....
Lyle Coal Co., .....		.....	3,900	27	3,900	1	.....	.....	21	7,287	1	2,500	937	2	3
Pine Hill Coal Co., .....		.....	2,250	3	2,250	.....	.....	4	30	7,040	1	13,000	3,000	.....	.....
Oak Hill Coal Co., .....		.....	2,500	5	2,500	6	.....	.....	21	1,600	4	2,000	1,100	.....	.....
Buck Run Coal Co., .....		.....	1,500	8	1,500	1	.....	.....	26	1,620	3	1,800	800	1	1
Darkwater Coal Co., .....		.....	1,200	6	1,200	1	.....	.....	16	730	3	4,000	1,200	.....	.....
Mt. Hope Coal Co., .....		.....	850	8	850	3	.....	.....	13	713	.....	.....	.....	.....	.....
White and Co., .....		.....	575	4	575	.....	.....	.....	13	467	3	1,900	500	.....	.....
Wolf Creek Coal Co., .....		.....	200	2	200	.....	.....	.....	7	165	.....	600	600	.....	.....
John H. Davis Coal Co., .....		.....	400	4	400	2	.....	.....	6	210	3	1,350	500	.....	1
Butcher Creek Coal Co., .....		.....	310	4	310	.....	.....	.....	3	.....	.....	500	300	.....	.....
Scott Estate, .....		.....	80	1	80	.....	.....	.....	3	85	.....	.....	.....	.....	.....
Totals, .....	.....	163	29,255	163	29,255	36	1	14	303	42,221	45	49,940	19,149	10	14

TABLE 3.—Number of each class of employees inside and outside of mines

Names of Operators	County	Inside										Outside								Grand total inside and outside			
		Mine foremen	Assistant mine foremen	Fire bosses and assistants	Miners	Miners' laborers	Drivers and runners	Doorboys and helpers	Pumpmen	Company men	All other employees	Total inside	Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Slatepickers (boys)	Slatepickers (men)	Bookkeepers and clerks		All other employees	Total outside	
Philadelphia and Reading Coal and Iron Co.,	Schuylkill	8	2	48	783	341	139	11	22	411	517	2,280	...	13	61	178	121	44	22	721	1,160	3,440	
St. Clair Coal Co.,		2	...	12	228	79	48	6	10	28	160	574	1	3	16	35	48	16	4	100	223	654	
Lytle Coal Co.,		1	...	1	175	175	50	10	4	100	...	524	1	1	12	19	25	15	8	91	229	803	
Pine Hill Coal Co.,		1	...	11	282	92	82	4	3	85	21	532	1	1	21	23	44	3	...	120	218	750	
Oak Hill Coal Co.,		1	...	5	145	57	13	1	...	3	8	321	1	1	7	15	15	1	4	78	122	443	
Back Run Coal Co.,		1	...	1	39	35	12	...	2	39	1	130	1	1	1	10	13	1	1	51	83	213	
Darkwater Coal Co.,		1	...	1	25	30	3	...	...	40	...	100	1	1	2	7	...	2	1	51	90	190	
Mt. Hope Coal Co.,		1	...	1	47	16	5	...	2	15	22	110	1	1	3	10	6	3	1	21	47	157	
White and Co.,		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	18	18	18
Wolf Creek Coal Co.,		...	...	1	16	8	3	...	2	13	...	44	...	1	1	2	5	3	4	1	32	49	93
John H. Davis Coal Co.,		...	...	...	6	16	...	...	...	...	...	23	...	1	1	1	1	1	1	...	15	26	49
Butcher Creek Coal Co.,		...	...	...	4	3	...	...	...	2	...	9	...	1	...	...	...	...	...	...	2	11	11
Scott Estate,		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals,	...	20	54	42	1,968	913	330	52	52	821	826	5,078	11	27	147	359	342	115	53	1,288	2,437	7,515	



TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked in Breaker											
		January	February	March	April	May	June	July	August	September	October	November	December
Philadelphia and Reading Coal and Iron Co., .....	Schuylkill,	26	25	26	.....	5	25	24	26	23	26	24	24
St. Clair Coal Co., .....		26	24	25	.....	7	18	21	23	21	23	21	22
Little Coal Co., .....		21	25	26	.....	8	24	25	24	23	26	24	22
Pine Hill Coal Co., .....		24	25	26	.....	3	21	25	26	23	26	24	22
Oak Hill Coal Co., .....		21	24	25	.....	4	19	22	20	23	25	24	24
Buck Run Coal Co., .....		23	24	26	.....	.....	18	25	25	22	26	24	24
Duckwater Coal Co., .....		23	24	22	.....	6	23	19	23	22	25	22	23
Mt. Hope Coal Co., .....		22	23	28	.....	.....	11	21	22	22	24	22	24
White and Co., .....		25	25	26	.....	.....	24	23	24	21	22	23	22
John H. Davis Coal Co., .....		24	25	24	.....	9	25	26	25	25	24	23	23
Butcher Creek Coal Co., .....		12	21	24	.....	2	20	12	20	22	22	16	18
Scott Estate, .....		26	25	26	.....	15	25	24	27	23	27	25	24
.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

TABLE 4.—Fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 3	Cyrenza Conasella, ...	Italian, ....	Miner, ....	28	M.	1	....	Pine Hill, .....	Schenck	Killed by fall of top slate while shoveling coal in breast chute.
10	George Waluski, ...	Lithuanian, ...	Miner, ....	34	S.	....	....	Lytle, .....		Killed by fall of top coal in breast while mining with a pick some coal that blast failed to remove.
18	Charles Kuznere, ...	Slavonian, ..	Laborer, ..	34	M.	....	....	St. Clair, .....		Killed by fall of coal while shoveling along side of pillar between gangway and airway.
22	James Dalton, .....	American, ..	Miner, ....	47	S.	....	....	Oak Hill, .....		Killed by fall of top slate while shoveling coal near face of breast.
Feb. 12	John Fotich, .....	Slavonian, ..	Miner, ....	40	M.	1	....	Oak Hill, .....		Fatally injured by fall of coal. He fastened boring machine to face of breast to commence drilling when a piece of top coal fell on him. He had tried to pull the piece down a short time prior to accident. Died February 28.
15	Stiney Kookus, .....	Polish, ....	Laborer, ..	44	M.	1	3	Phoenix Park, ....	Schenck	Fatally injured. He was working on culm bank. In attempting to get out of the way of a rush of culm he slipped on slat and was carried down chute and was caught by scraper flight. Died same day.
March 21	Joseph Young, .....	American, ..	Miner, ....	38	M.	1	....	Oak Hill, .....	Schenck	Killed by fall of rock near face of breast. He was returning to face of breast after a blast and when he arrived at top of manway the top rock fell on him.
22	Frank Kelly, .....	American, ..	Oiler, ....	18	S.	....	....	Pine Knot, .....		Killed by being struck by engine crank. He was wiping the abutment that covers the crank of the hoist engine. The engine crank not knowing Kelly was in this position at the time commenced to hoist and struck him.
May 25	William Saburis, .....	Lithuanian, ..	Driver, ....	23	S.	....	....	Phoenix Park, ....		Fatally injured. He was coming out gangway with trip of cars. The rule lashed him and he fell beneath car, and his arm was crushed at shoulder. Died same day.

June	6	David Lyons, .....	American, ..	Repairman, ..	28	S. ....	....	Pine Knot, .....	Fatally injured by being struck by lever. He was approaching men who were releasing, with a lever, a car that was fast at bottom of car hoist leading to the breaker. The sudden release of the car swung the lever, which struck him. Outside. Died same day.
	13	John Trickalavage, ...	Lithuanian, ..	Driver, ....	19	S. ....	....	Pine Knot, .....	Fatally injured. He jumped on front of car coming out of gangway and was caught between door frame and car. Died same day.
	17	John Lubosh, .....	Slavonian, ..	Laborer, ..	22	S. ....	....	Back Run, .....	Fatally injured by fall of top slate from side of gangway. The miner said he tried to pull the piece.
	20	Carl Womer, .....	American, ..	Miner, ....	24	M. ....	1	Otto, .....	Fatally injured by fall of top slate while working face of breast. Died same day.
July	18	John Stinecavage, ...	Russian, ....	Miner, ....	25	S. ....	....	Pine Hill, .....	Killed by fall of coal from breast pillar. He left his place to visit men who were working opposite side of pillar, and while standing there the top of skin, the top coal fell, hitting him against the prop.
		William Jackson, .....	American, ..	Starter, ...	43	S. ....	....	Glendower, .....	Fatally injured by blast. He ignited dynamite blast on lump of coal in breast battery. He said that was all he remembered. Died same day.
	23	Peter Savitsky, .....	Lithuanian, ..	Miner, ....	35	S. ....	....	Oak Hill, .....	Killed by fall of slate. He was drilling hole in mining bench at face of breast when a piece of dividing slate fell on him.
	30	John Brozga, .....	Lithuanian, ..	Miner, ....	39	M. ....	1 4	Pine Knot, .....	Killed by being caught in contact with blade of miner's drill wheel entering breast pillar heading. Died from injury August 20.
	31	Michael Cherrybon, ...	Slavonian, ..	Laborer, ..	55	M. ....	....	Otto, .....	Killed by being caught under wheels of railroad car that was being run out from breaker. He was working on loaded car track and breaker. The car came on rear of car, and he was killed.
Aug.	1	Paul Peridge, .....	Greek, .....	Miner, ....	45	M. ....	1 3	Back Run, .....	Killed by fall of top slate while working in breast. His partner called to him that top slate was working, but Peridge continued to work.
Sept.	9	Charles Scholl, .....	American, ..	Laborer, ..	18	S. ....	....	Otto, .....	Killed while trying to uncouple loaded cars at bottom of car hoist at top of breaker. He put his head between the cars and it was crushed. Outside.
	23	John Whiteash, .....	Slavonian, ..	Miner, ....	27	S. ....	....	Oak Hill, .....	Killed by rush of slate from old gob while in the act of tamping a hole in bottom bench of Top Split of Mammoth.

Schuylkill.

TABLE 4—Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Sept. 24	Raymond Dinger, ..	American,	Driver, ....	36	M.	1	3	Oak Hill, .....	Schuylkill,	Killed by fall of slate and timber in E. Primrose gangway. He was bringing car in with slate to timbermen. The miner told him that the place was working, but the mule kept on and Dinger followed and was caught under fall.
25	Alex. Hobanavage, ...	Polish, .....	Miner, .....	24	S.	.....	.....	Glendower, .....		Smothered by rush of clay and mud. He was standing by rush in front of chute, leading coal when rush of clay knocked him on the gangway.
	Andrew Gudalonis, ...	Lithuanian,	Laborer, ..	29	M.	1	.....	Phoenix Park, .....		Suffocated by gas. The miner noticed the coal checking on high side of gangway a short distance back from face, and he called to his two miners and the chute men to come out. They started out the gangway but Gudalonis went back for some reason. Water broke in from old works, unknown to the officials, flooded the airway and shut off the ventilation. Ten men were working in gangway at the time of the accident. Gudalonis was found in the manway of No. 59 breast 106 feet from gangway.
27	John Rescavage, .....	Greek, .....	Miner, .....	38	M.	1	5	Newcastle, .....		Killed by fall of coal while trying to get some coal with pick in chute pillar. He had been told by the foreman to leave the place and work in the adjoining place.
28	Stephen Bacusky, ...	Lithuanian,	Driver, ....	22	S.	.....	.....	Oak Hill, .....		Fatally injured by fall of slate. He was driving for contractors, following a truck Mountain seam. He went up in breast to start coal to run in chute, when top slate fell. Died November 15.
Oct. 2	Boris Bentz, .....	Lithuanian,	Laborer, ..	30	M.	1	.....	Phoenix Park, .....		Killed by fall of top slate while loading car at face of gangway on plane.

Oct. 18	Thomas O'Neil, .....	American, ..	Driver, ....	26	S.	....	....	Pine Knot, .....	Fatally injured. He placed his hand on mule's hip and mule kicked him in the stomach.
30	George Coloviska, ....	Hungarian, ..	Laborer, ..	47	M.	1	....	Howard, .....	Killed by fall of top slate while assisting to erect relief timber in gangway.
Nov. 8	Frank Godis, .....	Lithuanian, ..	Miner, ....	56	S.	....	....	Oak Hill, .....	Killed by fall of slate. He was shovelling coal in chute near face of breast when piece of dividing slate fell on him. He had been told by fire boss to secure the place before doing any other work.
Dec. 4	Elmer Brady, .....	American, ..	Loader boss, ....	22	S.	....	....	Howard, .....	Killed by being caught between mine car and timber at bottom of slope. He tried to pass car after signal had been given.
6	Lawrence Barinsky, ..	Lithuanian, ..	Miner, ....	35	M.	1	5	Lytle, .....	Skull crushed while pulling down a piece of slate that rested on gangway timber it twisted the timber, causing the collar to fall on his head. Died the next day.
10	Alexander Jobrey, ....	Greek, .....	Jig runner, ..	15	S.	....	....	St. Clair, .....	Killed by being caught between sprocket wheel and chain. He was sitting on railing in front of jigs and fell backwards to sprocket wheel of jigs below. Outside.
19	Joseph Carmel, .....	American, ..	Scraper tender, .....	20	S.	....	....	Pine Hill, .....	Killed by being caught by cog wheels of scraper line that leads from shaft to breaker. Outside.

Schuykill,



TABLE 5.—Non-fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan.								
5	John Berella, .....	Italian, ....	Laboret, .....	23	S.	Oak Hill, .....		Head injured by being struck by piece of rock that fell from between laggings while shoveling coal at gangway face.
8	Frank Raposky, ....	Lithuanian, ..	Laboret, .....	35	M.	Lytle, .....		Back injured by piece of coal falling on him while drilling hole at face of breast.
9	Charles Trepenski, ...	Lithuanian, ..	Miner, .....	31	M.	Wadesville, .....		Head and body injured by blast. He was trying to ignite two shots at face of breast when one of them exploded.
17	Cornelius Leary, .....	American, ..	Miner, .....	37	M.	Lytle, .....		Face and hands burned by explosion of gas near face of breast while trying to light his safety lamp he ignited the gas.
19	Simon Mickalofski, ..	Lithuanian, ..	Miner, .....	37	S.	Wadesville, .....		Leg fractured. A piece of coal moved in from breast and caught his leg against prop.
26	John J. Whalen, .....	American, ..	Patcher, .....	18	S.	Newcastle, .....		Hand crushed by being caught between car wheel and sprag while trying to get mine car to mount rail with sprag. Outside. Toes crushed. He was kicking chain on jigs with his foot trying to place it on wheel and his foot was caught. Outside.
27	William Lewis, .....	American, ....	Jig runner, .....	21	M.	Wadesville, .....	Schuylkill.	Pelvic bone fractured by being caught between mine car and door.
Feb.								
5	Henry Connick, .....	Greek, .....	Driver, .....	24	M.	Phoenix Park, .....		Hip injured while resting in breast man-way a piece of coal rolled against him.
10	Paul Holab, .....	Russian, ....	Miner, .....	52	M.	Lytle, .....		Hands and face burned by explosion of gas. While igniting fuse in breast they ignited the gas near face of breast.
12	Andrew Gulaw, .....	Slavonian, ...	Miner, .....	25	M.	Otto, .....		Hands and face burned. He ignited gas at face of breast when firing shot. His party warned him to examine for gas before firing.
	George Penola, .....	Slavonian, ...	Miner, .....	24	M.			
15	Lawrence Kalondick, .	Polish, ....	Miner, .....	43	M.	Howard, .....		
16	Martin Murphy, .....	American, ...	Miner, .....	33	M.	Lytle, .....		Leg fractured. While resting against breast battery a piece of coal rolled and caught his leg against battery prop.

Feb.	16	Walter Schaeffer, ...	American, ...	Switchman, .....	20	S. Wadesville, .....	Fingers crushed. While coupling mine cars his hand was caught between bumpers. Outside.
March	2	Henry Flynn, .....	American, ...	Slatepicker, .....	15	S. Howard, .....	Leg fractured. While playing on crank of engine in breaker he fell and was caught between crank and bed of engine. Outside.
	6	William Bardillosky, .	Lithuanian,	Miner, .....	26	S. Thomaston, .....	Hands and face burned by explosion of gas at face of breast. While firing blast he ignited gas.
	15	Rauley Coslocki, .....	Lithuanian,	Miner, .....	40	M. Wadesville, .....	Collar bone fractured. While walking on track he was caught by mine car against cement wall. Outside.
	26	Andrew Jurat, .....	Austrian, ...	Driver, .....	29	M. Buck Run, .....	Shoulder dislocated by being caught between mine car and side of tunnel.
May	28	Casmere Rozaltsy, ..	Russian, ...	Miner, .....	50	M. Lytle, .....	Face and hands burned by explosion of gas. He ignited gas when he fired blast.
	30	Anthony Scrubinski, ..	Polish, .....	Aslman, .....	35	S. Lytle, .....	Leg fractured. He jumped from ash dumper and fell. Outside.
June	13	Stephen Costisko, ....	Lithuanian,	Miner, .....	29	M. Wadesville, .....	Face and body injured by blast through pillar heading from adjoining breast.
	17	John Chermoski, ....	Slavonian, .	Laborer, .....	23	S. Buck Run, .....	Leg fractured and head injured by fall of slate at face of gangway.
		Michael Podolick, ....	Slavonian, .	Driver, .....	24	S. Wadesville, .....	Ribs fractured. Mine car jumped the track and caught him against side of gangway.
	19	Henry Schwaln, .....	American, ..	Miner, .....	55	M. Otto, .....	Hand injured by being caught between prop and car while changing prop in gangway.
	20	John Yocabusky, .....	Lithuanian,	Laborer, .....	30	M. Lytle, .....	Leg fractured by fall of coal at face of gangway.
	27	William Evans, .....	Welsh, .....	Miner, .....	51	M. Wadesville, .....	Hip dislocated. While erecting set of timber at face of breast, coal fell on him.
		Joseph Fisher, .....	Lithuanian,	Miner, .....	47	M. Otto, .....	Face and hands burned by explosion of gas at face of breast. His lamp was found unlocked.
		Joseph Feretti, .....	Italian, .....	Miner, .....	29	S. Wadesville, .....	Compound fracture of leg. While pulling down loose pieces of coal at face of gangway a piece of coal fell on him.
	28	Lyle Devers, .....	American, ..	Coupler, .....	17	S. Lytle, .....	Arm fractured by being caught between mine cars while coupling them.
		Tony Calobao, .....	Italian, .....	Laborer, .....	22	S. Lytle, .....	Face and hands burned by explosion of gas. He uncovered safety lamp to work in chute.
July	15	Wm. Silingus, .....	Lithuanian,	Miner, .....	33	M. Lytle, .....	Hips squeezed by being caught between mine car and head frame on top of slope.
	17	Frank Oniscavage, ..	Polish, .....	Miner, .....	35	M. Lytle, .....	Head, back and foot injured by fall of coal in breast pillar heading.
	20	Joseph Kouzba, .....	Polish, .....	Miner, .....	37	M. Lytle, .....	Hands and face burned by gas. He was firing blast in breast heading with cigarette and ignited the gas.
	31	Peter Polinski, .....	Austrian, ...	Laborer, .....	27	M. John Velth, .....	Ribs fractured by fall of top slate in heading while changing prop.
Aug.	22	James McKeone, .....	American, ..	Laborer, .....	25	S. Lytle, .....	Arm fractured by fall of slate while repairing electric bell.

Schuylkill,

TABLE 5—Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Aug. 30	Alfonso Bonosaw, ...	Italian, ....	Laborer, .....	23	M.	Pine Knot, .....		Leg fractured. A stick of timber rolled on him while unloading timber car. Outside.
Sept. 4	Michael Gula, .....	Russian, ....	Miner, .....	46	M.	Glendower, .....		Ribs fractured by fall of rock while working at face of breast.
6	Paul Strosky, .....	Lithuanian, ..	Miner, .....	32	M.	Wadesville, .....		Face and hands burned by gas in face of gangway. His safety lamp when found had cut one inch long in the gauze.
12	Garry Chiltini, .....	Tyrolese, ..	Miner, .....	40	S.	Mt. Hope, .....		Head and body injured by fall of top coal while removing pillar.
21	John Robin, .....	Russian, ....	Miner, .....	30	S.	Lytle, .....		Hands and face burned by explosion of gas at face of breast. In firing blast he ignited gas.
23	George Wythe, .....	American, ..	Miner, .....	56	M.	Oak Hill, .....		Leg fractured by rush of slate from old goaf in breast.
Oct. 3	Joseph Polakitus, ....	Lithuanian, ..	Miner, .....	38	M.	Glendower, .....		Leg fractured by fall of coal at face from upper side of gangway.
4	Joseph Myrs, .....	German, ....	Feeder, .....	19	S.	Phoenix Park, .....	Schuykill,	Leg crushed. He slipped from top of roller covering and fell between covering of the rollers and cog wheel covering. His leg was caught between wheels and timber on which wheels rested. Outside.
11	John Segan, .....	Austrian, ...	Miner, .....	36	M.	Howard, .....		Leg fractured by being struck by piece of timber.
14	John Hutton, .....	English, ...	Driver, .....	43	M.	Thomaston, .....		Ribs fractured. He attempted to get over side of mine car while it was in motion and was caught between car and top slate.
23	John Kaselewicz, ....	Russian, ....	Miner, .....	30	M.	Otto, .....		Head and body injured by blast in breast at face. Through a misunderstanding the man placed at electric battery fired the blast before Kaselewicz reached place of safety.
Nov. 15	Anthony Beresky, ... Charles Lucanish, ..	Lithuanian, .. Slavonian, ..	Miner, .....	46 26	M. M.	Otto, .....		Face and hands burned by explosion of gas at face of breast. They ignited fuse attached to shot thereby igniting the gas.

Nov. 22 John Hall, .....	American, ..	Driver, .....	44 M. Lytle, .....	{ Schuylkill, . }	{ Leg fractured. Mule walked on him and threw him down. Body injured by fall of coal at face of breast while prying it down.
Dec. 30 James Dormer, .....	American, ..	Miner, .....	47 M. Thomaston, .....		

## CONDITION OF COLLIERIES

## PHILADELPHIA AND READING COAL AND IRON COMPANY

Wadesville, Pine Knot, Otto, Phoenix Park, Glendower, Thomas-ton and John Veith Collieries.—Ventilation, drainage and condition as to safety, good.

## ST. CLAIR COAL COMPANY

St. Clair Colliery.—Ventilation, drainage, and condition as to safety, good.

## LYTLE COAL COMPANY

Lytle Colliery.—Ventilation, good, except in No. 3 level, where it is fair. Drainage and condition as to safety, good.

## PINE HILL COAL COMPANY

Pine Hill Colliery.—Ventilation, drainage and condition as to safety, good.

## OAK HILL COAL COMPANY

Oak Hill Colliery.—Ventilation, fair. Drainage, bad. The attempt to improve the condition of the drainage has been sidetracked for some cause or other. Condition as to safety, good.

## BUCK RUN COAL COMPANY

Buck Run Colliery.—Ventilation, drainage and condition as to safety, good.

## DARKWATER COAL COMPANY

Newcastle Colliery.—Ventilation and drainage, fair. Condition as to safety, good.

## MT. HOPE COAL COMPANY

Mount Hope Colliery.—Ventilation fair. Condition as to safety and drainage, good.

## WHITE AND COMPANY

Howard Colliery.—Ventilation, fair. Drainage, bad. Condition as to safety, good.

## JOHN H. DAVIS COAL COMPANY

Ellsworth Colliery.—Ventilation, fair. Condition as to safety and drainage, good.

## BUTCHER CREEK COAL COMPANY

Laurel Run Colliery.—Ventilation and drainage, fair. Condition as to safety, good.

## SCOTT ESTATE

Black Heath Colliery.—Ventilation, fair. Condition as to safety and drainage, good.



## IMPROVEMENTS

## PHILADELPHIA AND READING COAL AND IRON COMPANY

Wadesville Colliery.—The West Beechwood plane mentioned in last year's report was continued a distance of 1,400 feet to the level of the Beechwood water level tunnel. A lift was also turned from this plane at the level of the second steam shovel cut on the Beechwood culm bank.

Work is being done in the Beechwood water level tunnel with a view of recovering the remaining coal.

A 15-foot exhaust fan was installed at Primrose slope to replace a fan of smaller capacity.

Air locomotive haulage was installed in the shaft level.

The tunnel in the Holmes slope is being continued from the Bottom Bench of the Mammoth vein to the Skidmore vein; estimated length, 40 yards.

A tunnel from the East Seven Foot, shaft level, is being driven to Bottom Split vein; estimated length, 90 yards.

A lift was turned west from the power plane driven in breast No. 8, East Skidmore, shaft level.

A rock hole is being driven from breast No. 20, No. 1 lift, East Skidmore plane gangway to No. 1 chute, East Bottom Split of Mammoth gangway, No. 3 tunnel, No. 2 lift Skidmore plane, for ventilation; estimated length, 31 yards.

The ventilating rock hole, mentioned in last year's report, driven from No. 33 chute, West Skidmore gangway, No. 2 lift, West Skidmore plane to the Beechwood working, has been completed.

Pine Knot Colliery.—Completed—Inside: Air tunnel West Skidmore north dip to Daniel vein north dip No. 1 shaft.

In Progress—Inside: Opening second lift at new location in No. 2 shaft.

Completed—Outside: Second setting of 2 Stirling boilers and house. Ash trough and pit at boiler house. New compressor.

In Progress—Outside: New wash house.

Completed—Inside: Haulage tunnel from Bottom Bench to Middle Split. Air tunnel from Bottom Bench to Middle Split. Engine house in Primrose vein made fireproof. Pump house in seventh lift Primrose vein made fireproof. Pump house in White Ash slope third lift made fireproof.

In Progress—Inside: Stable in Old White Ash slope is being made fireproof. Old White Ash slope is being extended. 12-inch bore hole to sixth lift pump room is being drilled. Concreting at top of Skidmore slope. Haulage tunnel Bottom Bench to Middle Split.

In Progress—Outside: Power and generator house is being erected. Electrical haulage plant is being installed.

Phoenix Park Colliery.—Completed—Inside: Fireproof stable in second lift East Tracy power plane gangway. Fireproof stable in first lift East Tracy power plane. Fireproof stable in East Diamond sixth lift. Fireproof engine house No. 2 Underground slope.

In Progress—Inside: Fireproof stable in East Diamond fifth lift.

Fireproof pump room in Peach Mountain slope. Sinking No. 6 Tracy slope. Tunnel north through Saddle from West Top Tracy vein gangway at breast No. 4 to No. 1 Slope basin, Tracy vein.

Standing—Inside: Extension of Peach Mountain slope. Sinking No. 1 Underground slope. Sinking No. 7 or Tender slope, west of main hoisting slope.

Completed—Outside: Slush trestle north of breaker.

In Progress—Outside: Constructing landing and railroad from No. 6 Tracy slope to breaker.

Glendower Colliery.—Completed—Inside: Fireproof stable in Lelar vein north dip, Taylorsville level. Fireproof stable in Skidmore vein first lift West Glendower. Tunnel north dip Skidmore vein to north dip Daniel vein at water level tunnel.

In Progress—Inside: Basin slope from second landing, West Glendower to Glendower workings. Water level tunnel, north to Jugular basin at Richardson.

Completed—Outside: Motor house at Water level tunnel.

Standing—Inside: Tunnel from south dip Seven Foot to south dip Buck second lift, West Glendower.

Thomaston Colliery.—Completed—Inside: Air tunnel from Skidmore vein to Seven Foot vein lower level, Lelar slope. Air tunnel from East Skidmore north dip to Daniel vein north dip lower level, Lelar slope. Fireproof pump room in old level, Lelar slope. Fireproof upper pump room, Lelar slope. Fireproof stable East north dip Primrose, Crosby slope.

In Progress—Inside: Inside stable in Lelar vein third lift, Lelar slope.

Standing—Inside: Extension of Crosby slope from second level to third level.

Anchor Washery.—Completed—Outside: Washery.

#### LYTLE COAL COMPANY

Lytte Colliery.—Inside: Fourth level, 149 yards of tunnel. Fifth level, 10 yards of tunnel. Sixth level, 320 yards of tunnel. 145 yards of shaft turnouts.

Installed 1 Jeffrey 8-ton motor for south dip haulage, fifth level. New stables constructed on fourth, fifth, and sixth levels of concrete and steel.

Pumping plant installed, capacity to surface, 2,500 gallons per minute; consisting of one 17 by 26 by 10 by 36 Goyne pump, lift 280 feet fifth to fourth level; one 30 by 50 by 14 by 48 Scranton steam pump, lift 740 feet fourth level to surface.

Pump houses are built entirely of concrete and steel. Steam is conducted through 12-inch bore hole from surface to fourth level pump and via Four Foot slope to fifth level pump.

No. 6 Slope started in White Ash vein north dip, 650 feet long.

Outside: Installed 900 horse power Vulcan return tubular boilers.

Built concrete steel bridge over railroad to dirt and rock bank.

Head frame erected and sinking engines 250 H. P. locomotive, boilers and steam lines, for the purpose of sinking an air shaft 800 feet in depth from surface to White Ash vein, north dip; shaft to be a two-compartment standard hoisting shaft. A pair of 16 by 20 Vulcan engines placed on coal plane to breaker.

## PINE HILL COAL COMPANY

Pine Hill Colliery.—Outside: Installed 4-inch C. I. Hautboy water line, 2,580 feet long.

Inside: On fourth level of Shaft, a haulage tunnel was driven 194 feet long and an air tunnel 286 feet long parallel with the haulage tunnel, and pump house in the rock, 15 by 30 feet.

On the third level of shaft a cut-off tunnel was driven 67 feet long and a reinforced concrete hospital constructed, also a structural steel stable. In the drift a reinforced concrete hospital was constructed.

## OAK HILL COAL COMPANY

Oak Hill Colliery.—Inside: Tunnels driven, Black Heath to Black Heath third level, 17 yards; and tunnel Buck Mountain to Ridge, new drift, 26 yards.

Finished stable, Skidmore fourth level,  $32\frac{2}{3}$  yards in rock.

Tunnel driven Red Ash to White Ash, third level,  $27\frac{1}{3}$  yards.

Air tunnel from Shaft to White Ash 120 feet.

Skipping third level North leading to Shaft, 120 feet.

New fireproof pump house, with concrete and steel I beams, in third level Primrose.

New fireproof hospital, fourth level.

Fireproof barn, third level between White Ash and Red Ash, with concrete manger and walls.

Concrete air bridge in No. 1 drift, Buck Mountain.

New telephones and return bells in shaft connecting various levels.

Abandoned all hoisting on No. 1 slope; coal is taken up shaft.

Outside: Installed one pair 18 by 30 inch breaker engines, old breaker; one 12 by 16-inch jig engine, old breaker; 5 new jigs in old breaker; one 8 by 14 Vulcan locomotive; one 26-inch band saw in carpenter shop; one 30-inch fan in blacksmith shop; one 10 by 16 engine for band saw and fan; erected tower for rock dump, 60 feet high; built new locomotive house on dirt bank; erected new breaker engine house 30 by 40 feet, with iron roof.

## BUCK RUN COAL COMPANY

Buck Run Colliery.—Completed tunnel from West Seven Foot north dip No. 2 level to north dip of Daniel and Skidmore vein, length 135 feet.

Completed air tunnel 89 feet long from West Buck Mountain north dip No. 2 level to north dip Seven Foot vein, driven at right angles to pitch.

Completed a fireproof stable on second level; also fireproof stable on first level.

Completed fireproof hospital on second level. Started concreting for a fireproof stable on third level.

Completed tunnel 60 feet long from East Skidmore south dip of Seven Foot vein.

Completed tunnel 89 feet long from West Seven Foot south dip third level to south dip of Daniel vein.

Started tunnel from West Buck Mountain No. 11 plane gangway to south dip of Seven Foot vein; 44 feet driven to January 1, 1913.

Installed one 300 horse power Altman-Taylor boiler; also a new 8-foot fan for force draft in boiler house.

#### DARKWATER COAL COMPANY

New Castle Colliery.—The Tender slope was driven from second level to third level, a distance of 170 feet.

Tunnel 350 feet long was driven from West Mammoth north dip second level to north dip of Skidmore and Buck Mountain veins.

Completed fireproof stable in tunnel between West Skidmore south dip second level and south dip Buck Mountain vein.

Completed fireproof hospital on second level. Finished concreting 14-inch bore hole for column way from second level.

#### MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in Union Hall, Pottsville, April 1 and 2. The Board of Examiners was composed of Michael J. Brennan, Inspector, Pottsville; James B. Neale, Superintendent, Buck Run; Charles Larkin, Miner, Branchdale; Timothy Brennan, Miner, Heckscherville.

The following applicants passed a satisfactory examination and were granted certificates:

#### MINE FOREMEN

John H. Kissawetter, Pottsville; Joseph Dando, Llewellyn; John Dando, Minersville; John Brennan, Zerbe.

#### ASSISTANT MINE FOREMEN

John Maley, Pottsville; Robert Miller, Richard Murphy, Frederick McHale, Thomas Williams, Henry Kimmel, James Kessler, Minersville; Michael Buggy, Duncott; Thomas O. Parnell, Llewellyn.



## TWENTIETH DISTRICT

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SCHUYLKILL AND DAUPHIN COUNTIES

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Lykens, Pa., February 19, 1913.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor of transmitting herewith my Annual Report as Inspector of Mines of the Twentieth Anthracite District, for the year ending December 31, 1912.

Respectfully submitted,

CHARLES J. PRICE, Inspector.



## SUMMARY OF STATISTICS

Number of collieries, .....	7
Number of mines, .....	27
Number of mines in operation, .....	24
Number of tons of coal shipped to market, .....	1,886,935
Number of tons used at mines for steam and heat, .....	404,288
Number of tons sold to local trade and used by employes, ..	38,919
Number of tons produced, .....	2,330,142
Number of tons produced by compressed air machines, ...	.....
Number of tons produced by electrical machines, .....	.....
Number of persons employed inside of mines, .....	4,315
Number of persons employed outside, .....	1,672
Number of fatal accidents inside of mines, .....	10
Number of fatal accidents outside, .....	2
Number of non-fatal accidents inside of mines, .....	46
Number of non-fatal accidents outside, .....	2
Number of tons of coal produced per fatal accident inside, ..	233,014
Number of tons produced per fatal accident outside, .....	1,165,071
Number of tons produced per fatal accident inside and outside, .....	194,178
Number of persons employed per fatal accident inside, ...	431
Number of persons employed per fatal accident outside, ..	836
Number of persons employed per fatal accident inside and outside, .....	499
Number of persons employed per non-fatal accident inside, ..	94
Number of persons employed per non-fatal accident out- side, .....	836
Number of persons employed per non-fatal accident in- side and outside, .....	125
Number of wives made widows, .....	10
Number of children made orphans, .....	21
Number of steam locomotives used inside of mines, .....	.....
Number of steam locomotives used outside, .....	16
Number of compressed air locomotives used inside, .....	.....
Number of compressed air locomotives used outside, ....	.....
Number of electric motors used inside, .....	20
Number of electric motors used outside, .....	5
Number of fans in use, .....	23
Number of furnaces in use, .....	.....
Number of gaseous mines in operation, .....	24
Number of non-gaseous mines in operation, .....	.....
Number of new mines opened, .....	.....
Number of old mines abandoned, .....	1

TABLE A  
PRODUCTION OF COAL

Names of Operators	Tons
Philadelphia and Reading Coal and Iron Company, . . . . .	1,249,027
Lehigh Valley Coal Company, . . . . .	237,274
Summit Branch Mining Company, . . . . .	843,841
Total, . . . . .	<u>2,330,142</u>

Production by Counties

Schuylkill, . . . . .	1,486,301
Dauphin, . . . . .	843,841
Total, . . . . .	<u>2,330,142</u>

TABLE B—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employees inside	Number of employees outside	Total number of employees	Number of employees inside per fatal accident	Number of employees outside per fatal accident	Number of employees inside per non-fatal accident	Number of employees outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Philadelphia and Reading Coal and Iron Co., .....	5	1	6	19	.....	19	249,805	65,738	2,285	791	3,076	457	791	120	.....
Lehigh Valley Coal Co., .....	2	.....	2	1	1	2	118,637	237,274	424	140	564	212	140	424	140
Summit Branch Mining Co., .....	3	1	4	26	1	27	281,280	32,455	1,606	741	2,347	535	741	62	741
Totals and averages for district, ...	10	2	12	46	2	48	233,014	50,655	4,315	1,672	5,987	431	836	94	836

TABLE C.—Classification of Fatal Accidents Inside and Outside of Mines

	Months												Totals	Percentages
	January	February	March	April	May	June	July	August	September	October	November	December		
Causes of Accidents Inside														
Mine cars, .....	1										1		2	20.00
Explosions of gas, .....												1	1	10.00
Suffocation by gas, etc., .....											1		1	10.00
Explosions of powder and dynamite, .....			1										1	10.00
Blasts, premature and otherwise, .....	1							2					3	30.00
Falling into slopes, etc., .....								1					1	10.00
Rush of coal, .....												1	1	10.00
Totals, .....	2		1					3			2	2	10	100.00
Causes of Accidents Outside														
Cars, .....						1							1	50.00
Rush of culm, .....	1												1	50.00
Totals, .....	1					1							2	100.00
Grand totals inside and outside, .....	3		1			1		3			2	2	12	.....

TABLE D.—Classification of Non-Fatal Accidents Inside and Outside of Mines

	Months												Totals	Percentages
	January	February	March	April	May	June	July	August	September	October	November	December		
<b>Causes of Accidents Inside</b>														
Falls of coal, .....	1	1						1		1	1		5	10.87
Falls of slate, .....		2						1	1		1		6	13.04
Falls of roof, .....							1	2					3	6.52
Mine cars, .....		3				1		1		2	1		8	17.39
Explosions of gas, .....										3	1	1	5	10.87
Explosions of powder and dynamite, .....	1	2				2							5	10.87
Blasts, premature and otherwise, .....							1	1					2	4.35
Falling down manway, .....	1	1					1		1				4	8.70
Struck by timber, .....	1						1				1	1	4	8.70
Rush of coal, .....	1												1	2.18
Struck by piece of coal, .....		1											1	2.17
Struck by piece of debris, .....								1					1	2.17
Struck by latch, .....										1			1	2.17
Totals, .....	5	10				3	5	7	2	7	5	2	46	100.00
<b>Causes of Accidents Outside</b>														
Cars, .....									1				1	50.00
Rush of culm, .....	1												1	50.00
Totals, .....	1								1				2	100.00
<b>Grand totals inside and outside, .....</b>	<b>6</b>	<b>10</b>				<b>3</b>	<b>5</b>	<b>7</b>	<b>3</b>	<b>7</b>	<b>5</b>	<b>2</b>	<b>48</b>	<b>.....</b>

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	Totals
<b>Inside</b>												
Miners, .....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	1	3
Miners' laborers, .....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	1	5
Starters, .....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1
Timbermen, .....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
Totals, .....	2	.....	1	.....	.....	.....	.....	3	.....	.....	2	10
<b>Outside</b>												
Laborers, .....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Timbermen, .....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
Totals, .....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	2
Grand totals inside and outside, .....	3	.....	1	.....	.....	1	.....	3	.....	.....	2	12

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	Totals
<b>Inside</b>												
Fire bosses and assistants, ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Miners, .....	3	8	.....	.....	.....	2	4	4	.....	3	.....	22
Miners' laborers, .....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	3	7
Drivers and runners, .....	2	2	.....	.....	.....	.....	.....	.....	.....	1	.....	6
Doorboys and helpers, .....	.....	.....	.....	.....	.....	1	.....	1	.....	.....	1	3
Footmen, .....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
Totals, .....	5	10	.....	.....	.....	3	5	7	2	7	5	46
<b>Outside</b>												
Laborers, .....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	2
Totals, .....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	2
Grand totals inside and outside, .....	6	10	.....	.....	.....	3	5	7	3	7	5	48



TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months											
	Totals	December	November	October	September	August	July	June	May	April	March	February
American, .....	7	2	1	...	...	3	...	...	...	...	1	1
Irish, .....	1	...	...	...	...	...	...	1	...	...	...	...
Polish, .....	3	...	...	...	...	...	...	...	...	...	...	2
Russian, .....	1	...	1	...	...	...	...	...	...	...	...	...
Totals, .....	12	2	2	...	...	3	...	1	...	...	1	3

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months											
	Totals	December	November	October	September	August	July	June	May	April	March	February
American, .....	40	2	4	7	3	7	2	3	...	...	7	5
English, .....	1	...	...	...	...	...	...	...	...	...	1	...
German, .....	1	...	...	...	...	...	1	...	...	...	...	...
Polish, .....	5	...	1	...	...	...	1	...	...	...	2	1
Slavonian, .....	1	...	...	...	...	...	1	...	...	...	...	...
Totals, .....	48	2	5	7	3	7	5	3	...	...	10	6

TABLE I.—Operators and mines, kind of openings, type and size of fans, size of furnaces, volume of air produced by fan or furnace per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	Kind of opening	Gaseous or non-gaseous	Method of ventilation	Diameter of fan in feet and inches	Width of blades in feet and inches	Depth of blades in feet and inches	Number of revolutions per minute	Water gauge developed—in inches	Name of fan	Power used	Number of splits of air currents	Number of cubic feet of air per minute entering the mine at inlet	Total number of cubic feet of air per minute circulating in all the splits	Number of cubic feet of air per minute passing out at outlet	Number of persons employed inside
Philadelphia and Reading Coal and Iron Co.															
Lincoln Colliery:															
Lincoln No. 1, .....	Slope, .....	Gaseous.	Fan, .....	21	7	6	85	2.4	Guibal, ..	Steam, .....	45	233,000	233,000	240,000	1,067
Lincoln No. 2, .....	Slope, .....		Fan, .....	18	6	5.3	85	1.6	Guibal, ..	Steam, .....					
Lincoln No. 2 Vein Trial, ..	Slope, .....		Fan, .....	12	4	3.4	88	.7	Guibal, ..	Electricity, ..					
Lincoln Water Shaft, ..	Shaft, .....														
Good Spring Colliery:															
Good Spring No. 1, .....	Slope, .....	Gaseous.	Fan, .....	18	6	5	80	.8	Guibal, ..	Steam, .....	19	169,000	169,000	174,000	525
Good Spring No. 2, .....	Slope, .....		Fan, .....	15	4.5	5	80	1.1							
Good Spring No. 3, .....	Slope, .....		Fan, .....	18	6	5	95	1							
Good Spring No. 4, .....	Slope, .....		Fan, .....	15	4.5	3.5	95								
Brookside Colliery:															
Brookside No. 1, .....	Slope, .....	Gaseous.	Fan, .....	18	6	5	95	1.3	Guibal, ..	Steam, .....	20	275,000	275,000	289,000	703
Brookside No. 4, .....	Slope, .....		Fan, .....	18	6	5	85	.8							
Brookside Shaft, .....	Shaft, .....		Fan, .....	21	7	6	67	1.4							
Brookside Tender Slope, ..	Slope, .....		Fan, .....	14	4	5	75	.8							
Valley View Colliery:															
Valley View Tunnel, ..	Tunnel, ..														
Drift No. 1, .....	Drift, .....														
Drift No. 2, .....	Drift, .....														

\*Idle.

Highway	Valley	Coal Co.	Tunnel,	Gaseous,	Fan,	.....	29	6	5.9	75	6	Guibal,	Steam,	31	131,000	131,000	135,000	424
Blackwood Colliery:			Tunnel,		Fan,	.....	12	4	3	85	.....	Guibal,	Oil,	.....	.....	.....	.....	.....
Blackwood Tunnel,			Tunnel,		Fan,	.....	.....	.....	.....	.....	.....	Guibal,	.....	.....	.....	.....	.....	.....
Dundass,			Tunnel,		Fan,	.....	.....	.....	.....	.....	.....	Guibal,	.....	.....	.....	.....	.....	.....
Number 4,					Fan,	.....	.....	.....	.....	.....	.....	Guibal,	.....	.....	.....	.....	.....	.....
Summit Branch Mining Co.					Fan,	.....	.....	.....	.....	.....	.....	Guibal,	.....	.....	.....	.....	.....	.....
Williamstown Colliery:					Fan,	.....	.....	.....	.....	.....	.....	Guibal,	.....	.....	.....	.....	.....	.....
No. 1 Shaft,			Shaft,		Fan,	.....	25	8	7	.....	.....	Guibal,	.....	.....	.....	.....	.....	.....
No. 2 Shaft,			Shaft,		Fan,	.....	25	8	7	.....	.....	Guibal,	.....	.....	.....	.....	.....	.....
No. 3 Shaft,			Shaft,		Fan,	.....	25	8	7	.....	.....	Guibal,	.....	.....	.....	.....	.....	.....
Bear Valley Slope,			Slope,		Fan,	.....	14	4	4	.....	.....	Guibal,	.....	.....	.....	.....	.....	.....
No. 3 Slope,			Slope,		Fan,	.....	25	8	7	.....	.....	Guibal,	.....	.....	.....	.....	.....	.....
Big Lick,			Slope,		Fan,	.....	14	4	4	.....	.....	Guibal,	.....	.....	.....	.....	.....	.....
Short Mountain Colliery:					Fan,	.....	.....	.....	.....	.....	.....	Guibal,	.....	.....	.....	.....	.....	.....
Short Mountain,			Slope,		Fan,	.....	25	8	7	.....	.....	Guibal,	.....	.....	.....	.....	.....	.....
Lykens Valley,			Slope,		Fan,	.....	16	4	4	.....	.....	Guibal,	.....	.....	.....	.....	.....	.....
Strenground No. 4,			Slope,		Fan,	.....	25	8	7	.....	.....	Guibal,	.....	.....	.....	.....	.....	.....
Dryden,			Slope,		Fan,	.....	10	2.5	2.5	.....	.....	Guibal,	.....	.....	.....	.....	.....	.....
Drift Gap,			Tunnel,		Fan,	.....	.....	.....	.....	.....	.....	Guibal,	.....	.....	.....	.....	.....	.....
Bear Gap Tunnel,					Fan,	.....	.....	.....	.....	.....	.....	Guibal,	.....	.....	.....	.....	.....	.....

†Ventilated by fan at Blackwood Tunnel.  
§Ventilated by fan at Short Mountain.

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	Name of General Superintendent	Post Office	Name of Superintendent	Post Office	Railroad to Mine
Philadelphia and Reading Coal and Iron Co.						
Lincoln, .....	Schuylkill, ....	W. J. Richards, ....	Pottsville, .....	<div> <div>Reese Tasker, Mining Supt.</div> <div>E. E. Kaercher, Division Supt.</div> <div>John Lorenz, Inside Superintendent</div> <div>J. H. Lee, Outside Superintendent</div> </div>	<div> <div>Pottsville, .....</div> <div>Pottsville, .....</div> <div>Tremont, .....</div> <div>Tremont, .....</div> </div>	Philadelphia and Reading
Good Spring, .....						
Brookside, .....						
Valley View, .....						
Rausch Creek Washery, ..						
Middle Creek Washery, ..						
Lehigh Valley Coal Co.						
Blackwood, .....	Schuylkill, ....	F. M. Chase, .....	Wilkes-Barre, .....	William Underwood, ..	Mahanoy City, .....	Lehigh Valley
Summit Branch Mining Co.						
Williamstown, .....	Dauphin, .....	R. A. Quin, General Manager,	Wilkes-Barre, .....	<div> <div>William Aman, Outside Supt.</div> <div>M. J. Readdy, Inside Supt.</div> </div>	<div> <div>Lykens, .....</div> <div>Lykens, .....</div> </div>	Pennsylvania
Short Mountain, .....						
Williamstown Washery, ..						
Short Mountain Washery, ..						

\*Idle.

TABLE 2.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured, quantity of powder, dynamite and permissible explosives used, etc.

Names of Operators and Collieries	County	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employees	Total production of coal in tons	Number of days worked	Number of employees	Number of fatal accidents	Number of non-fatal accidents	Explosives			Number of horses and mules
										Number of pounds of powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used	
Philadelphia and Reading Coal and Iron Co. ....	Schuylkill	405,588	78,282	7,756	491,626	250	1,278	2	7	164,950	46,235	10,425	123
Lincoln, .....		286,065	56,219	7,765	350,079	254	706	1	4	2,825	114,635	37,559	72
Good Spring, .....		282,804	30,176	27	322,007	248	920	2	8	40,525	44,998	11,745	101
Brookside, .....		.....	.....	211	.....	.....	.....	.....	.....	.....	.....	.....	.....
Valley View, .....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Washeries: .....	Schuylkill	974,187	173,677	15,759	1,163,923	.....	2,912	5	19	208,300	205,988	59,759	266
Rausch Creek, .....		41,899	6,854	.....	48,746	97	94	1	.....	25	283	.....	2
Middle Creek, .....		32,615	2,876	867	37,335	77	70	.....	.....	.....	8	.....	.....
.....		74,507	9,730	867	85,104	.....	161	1	.....	25	291	.....	2
Totals, .....		1,018,994	183,407	16,626	1,249,027	.....	3,076	6	19	208,325	206,279	59,759	268
Lehigh Valley Coal Co. ....	Schuylkill	212,372	23,589	1,312	237,274	220	564	2	2	3,475	156,345	.....	21
Blackwood, .....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Summit Branch Mining Co. ....		311,960	50,233	6,075	368,268	254	1,081	1	17	53,150	132,586	.....	102
Short Mountain, .....		221,957	43,508	12,976	278,442	218	1,198	3	10	85,277	30,269	211	116
Washeries: .....		533,917	69,742	19,051	646,710	.....	2,283	4	27	188,427	162,765	231	218
Williamstown, .....	Dauphin	43,250	60,070	987	112,557	*156	31	.....	.....	.....	.....	.....	.....
Short Mountain, .....		48,402	34,860	1,692	84,574	291	34	.....	.....	.....	.....	.....	.....
.....		91,652	108,550	1,929	197,131	.....	65	.....	.....	.....	.....	.....	2
Totals, .....		625,669	197,292	20,980	843,841	.....	2,347	4	27	188,427	162,765	211	220
Grand totals, .....		1,886,325	404,288	38,919	2,330,142	.....	5,987	12	48	350,227	525,419	59,970	539

\*Day and night.



TABLE 2—Part 2

Names of Operators	County	Number of Boilers			Locomotives			Number of steam engines of all classes	Total horse power	Number of pumps delivering water to surface	Capacity in gallons per minute	Quantity delivered to surface per minute—gallons	Number of electric dynamos	Number of air compressors
		Cylindrical	Horse power	Tubular	Horse power	Total horse power	Steam	Air	Electric					
Philadelphia and Reading Coal and Iron Co., .....	Schuylkill, .....	.....	.....	72	9,000	9,000	7	.....	9	8	16,507	3,841	4	4
Lehigh Valley Coal Co., .....	Schuylkill, .....	.....	1,500	10	1,500	1,500	3	.....	5	.....	.....	.....	1	1
Summit Branch Mining Co., ..	Dauphin, .....	.....	11,175	92	12,175	12,175	6	.....	11	9	14,680	4,792	4	8
Totals, .....		7	1,000	174	21,675	22,675	16	.....	25	17	31,187	8,623	9	13



TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked in Breaker		
		Total	December	November
Philadelphia and Reading Coal and Iron Co., .....	Schuylkill, .....	251	24	24
Lehigh Valley Coal Co., .....	Schuylkill, .....	229	24	24
Summit Branch Mining Co., .....	Dauphin, .....	251	24	24
			24	24
			26	18
			23	23
			25	24
			24	25
			25	16
			6	8
			.....	.....
			.....	.....
			25	26
			24	24
			25	24
			24	25

TABLE 4.—Fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 12	Charles Barker, .....	American, ..	Laborer, .....	58	S.	..	..	Rausch Creek Washery, .....	Schuylkill, .....	Leg injured by rush of culm. Gangrene developed and he died Jan. 21. Outside.
17	Joseph Morsloger, ..	Polish, .....	Laborer, .....	34	M.	1	..	Good Spring, ....	Schuylkill, .....	Fatally injured by being caught between top of car and pillar while riding up the slope. Died January 18.
24	Anthony Molesky, ...	Polish, .....	Miner, .....	30	M.	1	1	Blackwood, .....	Schuylkill, .....	Instantly killed by a shot that blew through the pillar, while he was in the manway of his breast.
March 18	William Doyle, .....	Irish, .....	Starter, .....	40	M.	1	1	Blackwood, .....	Schuylkill, .....	Instantly killed by the explosion of a stick of dynamite in heading, where he had gone to start a battery.
June 13	Tony Yudeitz, .....	Polish, .....	Timberman, ...	50	M.	1	6	Williamstown, ...	Dauphin, .....	Leg injured while attempting to get on a trip of mine cars to ride through the tunnel. Died June 24. Outside.
Aug. 22	Harry Schroepe, .....	American, ..	Miner, .....	40	M.	1	5	Lincoln, .....	Schuylkill, .....	Moyer was instantly killed and Schroepe so badly injured that he died the same night, by the premature explosion of a shot they were tamping at face of gangway.
23	William F. Moyer, ..	American, ..	Laborer, .....	23	M.	1	1			Instantly killed by falling down slope. Suffocated by after-damp from an explosion of gas. He went in an abandoned gangway with a naked light and ignited the gas.
Nov. 27	David H. Stence, ....	American, ..	Timberman, ...	48	M.	1	..	Short Mountain, ..	Dauphin, .....	Fatally injured by falling under trip of mine cars while trying to step on the bumper of the first car, when it was passing him on gangway.
	Daniel Tobias, .....	American, ..	Laborer, .....	70	W.	..	..	Brookside, .....	Schuylkill, .....	Fatally burned by explosion of gas, which he ignited, when he went into an old breast with a naked light. Died the next day.
29	Andrew Fausant, ....	Russian, ....	Laborer, .....	28	M.	1	2	Short Mountain, ..	Dauphin, .....	Smothered by a rush of fine coal when a collar broke that they were preparing to remove on the main gangway.
Dec. 14	Harvey Kocher, .....	American, ..	Miner, .....	32	M.	1	3	Short Mountain, ..	Dauphin, .....	
24	Charles Campbell, ...	American, ..	Laborer, .....	24	M.	1	2	Brookside, .....	Schuylkill, .....	

TABLE 5.—Non-fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 10	Harry Klinger, .....	American, ..	Driver, .....	26	M.	Williamstown, ...	Dauphin, .....	Hips injured by falling timber on gangway.
13	Charles Eby, .....	American, ..	Miner, .....	52	M.	Williamstown, ...	Dauphin, .....	Body badly bruised by falling down manway of breast.
17	Joseph O'Neill, .....	American, ..	Driver, .....	18	S.	Brookside, .....	Schuylkill, .....	Badly burned by explosion of powder.
22	Henry Ruch, .....	American, ..	Miner, .....	48	M.	Williamstown, ...	Dauphin, .....	Injured across neck and shoulders by fall of coal at face of breast.
29	John Gush, .....	Polish, .....	Laborer, .....	25	M.	Williamstown, ...	Dauphin, .....	Leg fractured by rush of culm at culm bank of washery. Outside.
30	John H. Welker, .....	American, ..	Miner, .....	38	M.	Short Mountain, ..	Dauphin, .....	Leg fractured by rush of coal while loading mine car.
Feb. 1	John Richardson, ....	American, ..	Miner, .....	31	M.	Short Mountain, ..	Dauphin, .....	Back, shoulders and chest injured by fall of coal at face of gangway.
8	Charles Patrick, .....	American, ..	Driver, .....	19	S.	Brookside, .....	Schuylkill, .....	Arm broken by falling under mine car on gangway.
10	Benj. Grabowski, ..	Polish, .....	Miner, .....	24	S.	Williamstown, ...	Dauphin, .....	Leg fractured by falling down manway of breast.
15	Francis Schroppe, ....	American, ..	Miner, .....	51	S.	Good Spring, ....	Schuylkill, .....	Arm broken by being struck by lump of coal that rolled down the pitch.
16	John Harner, .....	American, ..	Driver, .....	19	S.	Good Spring, ....	Schuylkill, .....	Leg crushed by being caught between humpers of mine cars while trying to unblock mine gangway.
	Charles Coleman, ....	English, .....	Miner, .....	25	M.	Short Mountain, ..	Dauphin, .....	Back and hips badly injured by fall of slate at face of breast.
20	Jos. Liskoski, .....	Polish, .....	Miner, .....	27	M.	Blackwood, .....	Schuylkill, .....	Leg fractured by fall of slate at face of breast.
23	William W. Paul, ...	American, ..	Miner, .....	32	M.	Short Mountain, ..	Dauphin, .....	Arm fractured by being caught between mine car and air pipe on gangway.
28	Fred. Maiden, .....	American, ..	Miner, .....	27	S.			Badly burned by explosion of powder in breast heading.
	William Ziefman, ....	American, ..	Miner, .....	25	M.	Williamstown, ...	Dauphin, .....	Badly burned by above explosion and body bruised by falling down manway of breast.
June 4	{ Gurney McNeal, .... { John McNeal, .....	American, .. { American, ..	Miner, .....	30 27	M. M.	Williamstown, ... Williamstown, ...	Dauphin, .....	{ Severely burned by an explosion of powder in their breast heading.



June	10	Irvin Bates, .....	American, ..	Doorboy, .....	17	S. Lincoln, .....	Schuykill, .....	Leg fractured by being caught between mine car and prop in main tunnel.
July	5	Chas. Yabszinski, ...	German, ....	Miner, .....	31	M. Short Mountain, ..	Dauphin, .....	Leg fractured by fall of rock at face of working place.
	15	James Bye, .....	American, ..	Miner, .....	36	M. Lincoln, .....	Schuykill, .....	Leg fractured by being struck by debris from shot in gangway.
	20	William Paul, .....	American, ..	Miner, .....	31	M. Brookside, .....	Schuykill, .....	Leg fractured by fall of slate at face of working place.
	25	Frank Yankavage, ...	Slavonian, ..	Laborer, .....	41	M. Brookside, .....	Schuykill, .....	Ankle broken and cut by being caught between falling timber and rail on gangway.
		Tony Barnett, .....	Polish, .....	Miner, .....	30	M. Williamstown, ....	Dauphin, .....	Skull fractured by falling down manway of breast.
Aug.	3	Forrest E. Ferree, ..	American, ..	Miner, .....	27	M. Short Mountain, ..	Dauphin, .....	Back and hips injured by fall of rock at face of chute.
	8	George Thompson, ..	American, ..	Miner, .....	45	M. Brookside, .....	Schuykill, .....	Back and hips injured by fall of rock at face of breast.
	9	Charles C. Reigel, ..	American, ..	Miner, .....	39	M. Short Mountain, ..	Dauphin, .....	Two ribs fractured by fall of coal at face of breast.
	14	Clayton Miller, .....	American, ..	Miner, .....	25	S. Williamstown, ....	Dauphin, .....	Ribs fractured and back and hips injured by fall of slate at face of breast.
	16	Leroy Klising, .....	American, ..	Doorboy, .....	18	S. Brookside, .....	Schuykill, .....	Arm fractured by being caught between mine car and top of gangway.
	22	Edward Yoder, .....	American, ..	Laborer, .....	26	M. Lincoln, .....	Schuykill, .....	Face, arms and body badly bruised by being struck by debris from premature shot.
	23	Oliver Kemble, .....	American, ..	Footman, .....	19	S. Short Mountain, ..	Dauphin, .....	Internally injured and body cut and bruised by being struck by debris that fell down the slope.
Sept.	4	Martin O. Zerby, ....	American, ..	Laborer, .....	18	S. Blackwood, .....	Schuykill, .....	Leg broken at hip by being caught between railroad car and breaker. Outside.
	21	Franklin Adams, .....	American, ..	Miner, .....	24	M. Williamstown, ....	Dauphin, .....	Leg fractured by falling down manway of breast.
	23	James Evans, .....	American, ..	Miner, .....	30	M. Williamstown, ....	Dauphin, .....	Leg fractured by fall of slate at face of breast.
Oct.	1	Harry Heberling, ....	American, ..	Laborer, .....	19	S. Lincoln, .....	Schuykill, .....	Shoulder dislocated and leg fractured by fall of coal while robbing pillars.
		Louis Sager, .....	American, ..	Miner, .....	28	M. Good Spring, ....	Schuykill, .....	Face, neck and hands burned by explosion of gas in gangway.
	14	William Raudenbush, ..	American, ..	Loader, .....	56	M. Williamstown, ....	Dauphin, .....	Leg fractured by being struck by latch, which flew up when motor pulled over it in tunnel.
	15	Ray Fetterhoff, .....	American, ..	Driver, .....	18	S. Lincoln, .....	Schuykill, .....	Arm fractured by being caught between mine car and top of gangway.
	16	Charles Graver, .....	American, ..	Miner, .....	36	M. Good Spring, ....	Schuykill, .....	Face, hands and body burned by explosion of gas and body bruised by falling down manway of breast.
	18	John Hay, .....	American, ..	Fire-boss, .....	63	M. Williamstown, ....	Dauphin, .....	Arm fractured by being caught between mine car and top while coming up slope.
	26	James McNealls, ....	American, ..	Miner, .....	50	M. Williamstown, ....	Dauphin, .....	Face and hands burned by explosion of gas in the chute that he was driving.
Nov.	12	Ray Guber, .....	Polish, .....	Driver, .....	20	S. Williamstown, ....	Dauphin, .....	Pelvic bone fractured by being caught between mine car and prop on gangway.

TABLE 5—Continued

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Nov. 13	D. A. Lehman, .....	American, ..	Laborer, .....	29	S.	Lincoln, .....	Schuylkill, .....	Leg fractured by timber rolling on it on gangway.
18	Roland Brown, .....	American, ..	Laborer, .....	*21	S.	Brookside, .....	Schuylkill, .....	Leg fractured by fall of coal at face of gangway.
23	Samuel Brown, .....	American, ..	Laborer, .....	26	M.	Lincoln, .....	Schuylkill, .....	Leg fractured by fall of slate on buggy gangway.
27	William Drum, .....	American, ..	Doorboy, .....	17	S.	Brookside, .....	Schuylkill, .....	Leg fractured and slightly burned by explosion of gas.
Dec. 2	Lewis E. Enders, ....	American, ..	Miner, .....	36	M.	Short Mountain, ..	Dauphin, .....	Arm broken by being caught between mine prop and top of gangway.
14	Henry Grosser, .....	American, ..	Miner, .....	25	S.	Short Mountain, ..	Dauphin, .....	Slightly burned by explosion of gas in breast heading.

## CONDITION OF COLLIERIES

## PHILADELPHIA AND READING COAL AND IRON COMPANY

Lincoln, Good Spring and Brookside Collieries.—Ventilation, drainage and condition as to safety, good.

Valley View Colliery.—Idle. Only enough men employed to keep it in good condition.

## LEHIGH VALLEY COAL COMPANY

Blackwood Colliery.—Ventilation, drainage and condition as to safety, good.

## SUMMIT BRANCH MINING COMPANY

Williamstown and Short Mountain Collieries.—Ventilation, good. Drainage, fair. Condition as to safety, good.

## IMPROVEMENTS

## PHILADELPHIA AND READING COAL AND IRON COMPANY

Lincoln Colliery.—Tunnel 98 feet long from No. 5 to No. 4 vein, west sixth lift, at breast No. 183, has been completed.

Stables on fourth and sixth lifts, and pump-houses on fourth lift, were made fireproof.

Electric haulage was extended on the East No. 2 vein gangway, sixth lift, to breast No. 160, and also on the west No. 5 vein gangway, sixth lift, to breast No. 180.

Electric locomotive installed on sixth lift.

New concrete check-off house built at top of shaft.

New fire line with spray system, has been installed at breaker. The wash-house has been furnished with fire protection and filled with shower baths.

Good Spring Colliery.—The mouth of the tender slope was concreted and made fireproof for a distance of 105 feet.

The Mammoth vein gangway, second lift, was made fireproof between No. 1 slope and tender slope.

Fireproof stables were completed on second and third lifts, No. 1 slope. The stables on first and second lifts, No. 3 slope, were made fireproof. A new fire line, with spray system, has been installed at breaker. The wash-house has been remodeled, and fire line with spray system, also shower baths, have been installed.

Brookside Colliery.—Tunnel 168 feet long was driven from No. 4 to No. 5 vein, at top of No. 4 plane. Tunnel has also been started on the fifth lift, to be driven from the No. 4 vein to coal and water shaft, a distance of 949 feet.

The outside stable was completed and all the mules on the second and third lifts are stabled therein.

No. 1 slope has been sunk to the old No. 1 plane level, a distance of 443 feet.

A new fire line spray system was installed at the East breaker.

A new foreman's office was built at top of No. 4 slope.

A feed pump house was erected at No. 4 boiler house, and the wash-house remodeled and filled with shower sprays.

Valley View Colliery.—A mine track is being built from Good Spring to Valley View, and when completed all the coal from Valley View will be transported to Good Spring for preparation.

Swatara.—The main railroad has been extended to the upper banks and a new plant built for loading the culm in railroad cars to be taken to Middle Creek washery for preparation.

Rausch Creek Washery.—A mine track has been built to East Franklin dirt banks to convey the culm to Rausch Creek for preparation.

A new No. 40 Bucyrus steam shovel has been installed at the East Franklin banks to load the culm into mine cars.

A Phillips dump has also been installed.

#### LEHIGH VALLEY COAL COMPANY

Blackwood Colliery.—Tunnel was driven from the Orchard vein to Skidmore vein at No. 4 tunnel, a distance of 260 feet; also tunnel driven from the Skidmore to the Tracey on the east side in Blackwood tunnel, a distance of 820 feet.

The Tracey slope was sunk 203 feet, and the shaft 180 feet, during the year.

#### SUMMIT BRANCH MINING COMPANY

Williamstown Colliery.—A new fan, 10 feet in diameter, was erected on the Bear Valley side, and a new air compressor installed in a concrete building.

Built 29 new mine cars and buggies.

Steam line was run from No. 2 shaft boiler house to No. 1 shaft.

Double battery B. and W. boilers installed in No. 2 shaft boiler house.

Built a new concrete lamp house, new wash-house, and new waiting-room for miners.

Electric haulage system extended and additional lighting added.

Concrete hospital established inside.

Tunnels were driven from Big Lick workings to White Ash vein; from W. No. 9 to No. 9½ vein in No. 2 shaft; from No. 7 vein to No. 11 vein Bear Valley slope; from W. No. 9 vein to No. 9½ vein in No. 1 shaft; from W. No. 9 vein north to No. 1 shaft, South tunnel; from W. No. 9 vein south to Buck Mountain vein No. 1 shaft; from gangway E. No. 11 vein to No. 1 shaft counter; from East White's vein to East Lykens vein No. 2 shaft counter; from East Lykens vein to Little vein; also rock plane in No. 2 shaft.

Airways were driven to No. 2 shaft; from No. 1 shaft south tunnel to No. 2 shaft; and from East No. 9½ vein to No. 1 shaft, South tunnel.

All inside stables were made fireproof.

Williamstown Washery.—A new scraper line was built and an additional boiler of the Loco type installed.



Short Mountain Colliery.—Built 216 new mine cars and buggies. Installed electric lines, new electric fan 10 feet in diameter, and additional double battery B. and W. boilers in new boiler house.

Concrete electric locomotive house was erected.

Planes were driven, No. 2 counter White's vein to No. 3 West; from Big vein to No. 4 slope extension.

Tunnels were driven from the following: Bottom of Bear Gap slope; old No. 1 level to No. 1 pocket; new plane No. 2 counter White's vein to No. 3 West; No. 6½ counter, No. 3 West; No. 2 counter basin pillar slope No. 3 West; No. 2 counter White's vein No. 3 West; White Ash slope; White Ash, Bear Gap tunnel; White Ash gangway; White Ash, Pat Martin. Also airways driven from White's vein No. 4 level, No. 4 slope, and from No. 2 gate.

All inside stables were made fireproof.

A hoisting engine and engine room were added in White's vein basin slope, No. 4 extension; a Goynes pump and pump room in No. 4 level, No. 4 slope, and a hoisting engine installed at No. 1 drift slope.

This colliery, after a continuous operation of 75 years, using slopes driven on Lykens veins, as outlets for transportation, has now commenced to sink a four-compartment shaft, which will be sunk to a depth of 1,650 feet. Tunnels are being driven at the different levels to connect with the shaft to hoist men, coal and material. This will reduce the cost of maintenance by dispensing with three slopes, and, it is estimated, will prolong the life of the colliery 35 years.

Lykens veins in this basin are of a friable nature, hence the old style breaker caused considerable waste, and, to remedy this, the Company has during the year erected an up-to-date breaker with latest equipments. In the construction of this breaker, Superintendent William Auman and Engineer Charles Kutzner have embodied several new ideas, by which, it is hoped, much of the waste will be eliminated. During all this new work, not a single workman was injured or killed.

Short Mountain Washery.—A new conveyor line was constructed.

## MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in Union Hall, Pottsville, April 1 and 2 and at Lykens, April 11 and 12. The Board of Examiners was composed of the following: Charles J. Price, Inspector; William Auman, Superintendent, Lykens; W. C. Wagner, Miner, Tower City; Samuel Evans, Miner, Minersville.

The following persons passed a satisfactory examination and were granted certificates.

## MINE FOREMEN

William R. Bottomley, Williamstown; Harry L. Shamper, Lykens; John W. Kniley, Tower City.

## ASSISTANT MINE FOREMEN

William Grove, William H. King, Tower City; Amos Shuey, Harvey A. Behney, Reinerton; Charles F. Batdorf, Orwin; Ellwood F.



Rickert, Valley View; Adam Wahl, Charles C. Miller, John L. Rhody, Joliett; Samuel E. Kimmel, Peoples; James J. Lawler, W. Scott Morgan, Donaldson; Henry Duffy, Robert L. Price, Jacob W. Dixon, James W. Gammell, John H. Pritchard, Tremont; William H. Smith, William A. Brennan, Clayton C. Miller, James J. Philips, Williams-town; Alfred L. Smallwood, Lykens; Joseph Seiger, Florian Bonan, Blackwood; E. F. Unger, Melvin C. Ulsh, Muir.

## TWENTY-FIRST DISTRICT

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LACKAWANNA, SULLIVAN, SUSQUEHANNA AND WAYNE COUNTIES

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Forest City, Pa., February 21, 1913.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor to transmit herewith my Report as Inspector of Mines of the Twenty-first Anthracite District, for the year ending December 31, 1912.

Respectfully submitted,

BENJAMIN MAXEY, Inspector.

## SUMMARY OF STATISTICS

Number of collieries, .....	11
Number of mines, .....	16
Number of mines in operation, .....	16
Number of tons of coal shipped to market, .....	1,629,878
Number of tons used at mines for steam and heat, .....	132,851
Number of tons sold to local trade and used by employes, ..	34,209
Number of tons produced, .....	1,796,938
Number of tons produced by compressed air machines, ...	.....
Number of tons produced by electrical machines, .....	.....
Number of persons employed inside of mines, .....	2,756
Number of persons employed outside, .....	993
Number of fatal accidents inside of mines, .....	9
Number of fatal accidents outside, .....	2
Number of non-fatal accidents inside of mines, .....	15
Number of non-fatal accidents outside, .....	4
Number of tons of coal produced per fatal accident inside, ..	199,660
Number of tons produced per fatal accident outside, .....	898,469
Number of tons produced per fatal accident inside and outside, .....	163,358
Number of persons employed per fatal accident inside, ...	306
Number of persons employed per fatal accident outside, ..	497
Number of persons employed per fatal accident inside and outside, .....	341
Number of persons employed per non-fatal accident inside, ..	184
Number of persons employed per non-fatal accident out- side, .....	248
Number of persons employed per non-fatal accident inside and outside, .....	197
Number of wives made widows, .....	5
Number of children made orphans, .....	18
Number of steam locomotives used inside of mines, .....	1
Number of steam locomotives used outside, .....	11
Number of compressed air locomotives used inside, .....	.....
Number of compressed air locomotives used outside, .....	1
Number of electric motors used inside, .....	28
Number of electric motors used outside, .....	.....
Number of fans in use, .....	16
Number of furnaces in use, .....	.....
Number of gaseous mines in operation, .....	.....
Number of non-gaseous mines in operation, .....	16
Number of new mines opened, .....	.....
Number of old mines abandoned, .....	.....

TABLE A  
PRODUCTION OF COAL

Names of Operators	Tons
Hillside Coal and Iron Company, .....	515,155
Hudson Coal Company, .....	467,899
Connell Anthracite Mining Company, .....	247,795
Northern Anthracite Coal Company, .....	201,477
Northwest Coal Company, .....	177,898
O'Boyle-Foy Anthracite Coal Company, .....	121,037
Carbondale Coal Mining Company, .....	28,172
Clinton Falls Coal Company, .....	12,710
Lincoln Hill Coal Company, .....	10,487
Wachna-Taylor Anthracite Coal Company, .....	9,365
Stillwater Coal Company, .....	4,943
Total, .....	<u>1,796,938</u>

Production by Counties

Lackawanna, .....	614,271
Sullivan, .....	579,674
Susquehanna, .....	520,098
Wayne, .....	82,895
Total, .....	<u>1,796,938</u>

TABLE B—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Number of employees inside	Number of employees outside	Total number of employees	Number of employees inside per fatal accident	Number of employees outside per fatal accident	Number of employees inside per non-fatal accident	Number of employees outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total								
Hillside Coal and Iron Co., .....	6	.....	6	5	.....	5	103,031	1,027	338	1,365	171	.....	205	.....
Hudson Coal Co., .....	1	.....	1	2	.....	2	233,949	615	182	797	615	.....	308	.....
Donnell Anthracite Mining Co., .....	1	.....	1	1	.....	1	247,786	334	160	494	.....	80	334	.....
Northwest Coal Co., .....	.....	2	2	1	.....	1	177,898	298	85	383	.....	.....	298	85
O'Peete-Poy Anthracite Coal Co., .....	.....	.....	.....	5	.....	5	24,297	129	63	192	.....	.....	26	.....
Carbondale Coal Mining Co., .....	.....	.....	.....	1	.....	1	28,172	58	29	87	.....	.....	58	.....
Carbondale Hill Coal Co., .....	1	.....	1	1	.....	1	.....	35	9	44	35	.....	.....	.....
Stillwater Coal Co., .....	1	.....	1	.....	.....	.....	.....	17	9	26	17	.....	.....	.....
Miscellaneous Companies, .....	.....	.....	.....	.....	.....	.....	.....	243	118	361	.....	.....	.....	.....
Totals and averages for district, ....	9	2	11	15	4	19	119,796	2,756	993	3,749	306	497	184	248



TABLE C.—Classification of Fatal Accidents Inside and Outside of Mines

	Months												Percentages
	Totals	December	November	October	September	August	July	June	May	April	March	February	
Causes of Accidents Inside													
Falls of roof, .....	55.56	1	...	...	...	1	...	...	...	1	...	1	...
Explosions of powder and dynamite, .....	11.11	...	...	...	...	...	...	...	...	...	1	...	...
Blasts, premature and otherwise, .....	22.22	...	...	...	...	...	...	...	...	...	2	...	...
Electricity, .....	11.11	1	...	...	...	...	...	...	...	...	1	...	...
Totals, .....	100.00	9	2	...	...	1	...	...	...	1	2	...	...
Causes of Accidents Outside													
Cars, .....	50.00	...	...	...	...	...	...	...	...	1	...	...	...
Elevators, .....	50.00	...	...	...	...	...	...	...	...	...	1	...	...
Totals, .....	100.00	...	...	...	...	...	...	...	...	1	...	...	...
Grand totals inside and outside, .....		11	2	...	...	1	...	...	...	2	3	2	1

TABLE D.—Classification of Non-Fatal Accidents Inside and Outside of Mines

	Months												Percentages	
	January	February	March	April	May	June	July	August	September	October	November	December		Totals
Causes of Accidents Inside														
Falls of coal, .....	.....	.....	.....	.....	.....	.....	2	1	.....	.....	.....	.....	1	6.67
Falls of roof, .....	1	1	1	.....	.....	.....	.....	.....	.....	1	1	.....	7	46.67
Mine cars, .....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	2	13.33
Explosions of powder and dynamite, .....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	2	13.33
Struck by timber, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	6.67
By falling, .....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	13.33
Totals, .....	2	2	2	.....	.....	.....	2	4	.....	1	2	.....	15	100.00
Causes of Accidents Outside														
Cars, .....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2	50.00
By falling, .....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	25.00
Mules, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	25.00
Totals, .....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	1	1	4	100.00
Grand totals inside and outside, .....	3	3	2	.....	.....	.....	2	4	.....	1	3	1	19	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	Totals
<b>Inside</b>												
Miners, .....	...	2	1	...	...	...	...	1	...	...	1	4
Miners' laborers, .....	1	...	...	...	...	...	...	1	...	...	...	2
Drivers and runners, .....	...	...	1	...	...	...	...	...	...	...	...	1
Chargemen, .....	...	...	...	1	...	...	...	...	...	...	...	1
Tracklayers, .....	...	...	...	...	...	...	...	...	...	...	1	1
Totals, .....	1	2	2	1	...	...	...	1	...	...	2	9
<b>Outside</b>												
Slatepickers (boys), .....	...	...	1	...	...	...	...	...	...	...	...	1
Loaders, .....	...	...	...	1	...	...	...	...	...	...	...	1
Totals, .....	...	...	1	1	...	...	...	...	...	...	...	2
Grand totals inside and outside, .....	1	2	3	2	...	...	...	1	...	...	2	11

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months											
	January	February	March	April	May	June	July	August	September	October	November	Totals
<b>Inside</b>												
Miners, .....	1	...	1	...	...	...	2	1	...	...	2	7
Miners' laborers, .....	...	...	1	...	...	...	...	1	...	...	...	4
Drivers and runners, .....	1	...	...	...	...	...	...	1	...	...	...	2
Machine helpers, .....	...	...	...	...	...	...	...	1	...	...	...	1
Driver bosses, .....	...	...	...	...	...	...	...	...	...	1	...	1
Totals, .....	2	2	2	...	...	...	2	4	...	1	2	15
<b>Outside</b>												
Engineers and firemen, .....	1	...	...	...	...	...	...	...	...	...	1	1
Drivers, .....	...	1	...	...	...	...	...	...	...	...	1	2
Laborers, .....	...	...	...	...	...	...	...	...	...	...	...	...
Totals, .....	1	1	...	...	...	...	...	...	...	...	1	4
Grand totals inside and outside, .....	3	3	2	...	...	...	2	4	...	1	3	19

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
American, .....		1	2										12
Polish, .....		1											1
Italian, .....				1									1
Slavonian, .....	1		1					1					3
Lithuanian, .....				1								2	3
Austrian, .....													
Totals, .....	1	2	3	2				1				2	11

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												Totals
	January	February	March	April	May	June	July	August	September	October	November	December	
American, .....	2	1	1				1			1			6
English, .....								1			1		2
Polish, .....	1							1			1	1	4
Italian, .....		1						2					3
Lithuanian, .....			1				1						2
Austrian, .....		1											1
Russian, .....											1		1
Totals, .....	3	3	2				2	4		1	3	1	19

TABLE I.—Operators and mines, kind of openings, type and size of fans, size of furnaces, volume of air produced by fan or furnace per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	Kind of opening	Gaseous or non-gaseous	Method of ventilation	Diameter of fan in feet and inches	Width of blades in feet and inches	Depth of blades in feet and inches	Number of revolutions per minute	Water gauge developed—in inches	Name of fan	Power used	Area of furnace bars in square feet	Number of splits of air currents	Number of cubic feet of air per minute entering the mine at inlet	Total number of cubic feet of air per minute circulating in all the splits	Number of cubic feet of air per minute passing out at outlet	Number of persons employed inside
Hillside Coal and Iron Co. Forest City Colliery: Forest City No. 2	Shaft, ...	Non-gas., ..	2 Fans, ...	{ 18 24 18 }	6. 7. 5.	6. 7. 5	70 65 80	1 1 1	Guibal, Guibal, Guibal,	Steam, Steam, Steam,	.. .. ..	6 5 5	107,056 72,874 76,850	108,203 70,540 72,694	113,185 74,014 77,349	330 302 295
Clifford, .....	Shaft, ...	Non-gas., ..	Fan, .....	18	5.	5	80	1	Guibal,	Steam,	..	5	76,850	72,694	77,349	295
Hudson Coal Co. Clinton Colliery: Clinton No. 3, Top vein, Clinton No. 8, Riverside, Clinton No. 5, Clifford Vein	Slope, Slope, Drift, ..	Non-gas., ..	{ Fan, Fan, Fan, ... }	17 20 10	4 5 2.5	4 5 2.5	85 75 112	1.6 1.4 .6	Guibal, Guibal, Guibal,	Electricity, Steam, Steam,	.. .. ..	2 4 1	52,600 77,450 27,500	50,620 77,820 26,275	54,695 78,060 28,500	118 212 51
Clinton No. 7, Clifford Vein	Drift, ..	Non-gas., ..	Fan, ...	10	2.5	2.5	112	.5	Guibal,	Steam,	..	1	27,600	26,750	28,450	72
Clinton No. 10, Grassy V., Connell Anthracite Mining Co.	Slope, ...	Non-gas., ..	{ Fan, ... }	20	5	5	75	.9	Guibal,	Electricity,	..	4	83,900	81,420	86,990	159
Connell Colliery: Connell, .....	Drift, .....	Non-gas., ..	Fan, .....	18	4	4	100	.2	Guibal,	Steam, .....	..	1	94,000	67,000	100,000	235
Northern Anthracite Coal Co.	Drift, .....	Non-gas., ..	Fan, .....	16	5	5	85	1.6	Guibal,	Steam, .....	..	3	72,500	63,600	72,500	170
Murray Colliery: Murray, .....	Shaft, ...	Non-gas., ..	Fan, .....	16	5	6	85	1.6	Guibal,	Steam, .....	..	3	72,500	63,600	72,500	170

Northwest Coal Co. Northwest Colliery: Northwest, .....	Non-gas., ..	2 Fans, ..	{ 16 20 }	4 5	5 6	80 70	1.5 1.5	Gubal, .....	Electricity, ..	5	100,000	98,000	120,000	336
O'Boyle-Foy Anthracite Coal Co. O'Boyle-Foy Colliery: O'Boyle-Foy, .....	Non-gas., ..	Fan, .....	8	6	6	60	1.2	Gubal, .....	Steam, .....	3	41,500	46,300	50,800	140
Carbondale Coal Mining Co. Bolands Colliery: Bolands, .....	Non-gas., ..	Fan, .....	10	3	3	65	.1	Gubal, .....	Steam, .....	1	12,000	11,000	14,000	56
Clinton Falls Coal Co. Clinton Falls Colliery: Clinton Falls, .....	Non-gas., ..	Natural, ..	.....	.....	.....	.....	.....	.....	.....	1	6,000	5,000	7,000	21
Lincoln Hill Coal Co. Bartons Colliery: Bartons, .....	Non-gas., ..	Fan, .....	8	4	3	200	.7	Gubal, .....	Steam, .....	1	9,000	8,000	10,000	83
Wachna-Taylor Anthracite Coal Co. Wachna-Taylor Colliery: *Wachna-Taylor, .....	Non-gas., ..	†	.....	.....	.....	.....	.....	Gubal, .....	Steam, .....	1	18,000	18,000	20,500	21
Stillwater Coal Co. Stillwater Colliery: Stillwater, .....	Non-gas., ..	Fan, .....	8	3	2	75	.75	Gubal, .....	Steam, .....	1	6,000	6,000	6,100	15

\*Formerly Randall and Schaud, operated by Randall and Schaud Brothers Coal Company, Limited; Wachna-Taylor Anthracite Coal Company took charge Sept. 15.  
†Ventilated by O'Boyle-Foy Anthracite Coal Co., on Southwest split.



TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	Name of General Superintendent	Post Office	Name of Superintendent	Post Office	Railroad to Mine
Hillside Coal and Iron Co.						
Forest City, .....	Susquehanna, ..	William W. Inglis,...	Scranton, .....	H. E. Yewens, .....	Forest City, .....	Erte
Hudson Coal Co.,						
Clinton, Washery, .....	{ Lackawanna,					
Clinton, Washery, .....	{ Wayne, .....	C. C. Rose, .....	Scranton, .....	E. R. Pettebone, ....	Dorranceton, .....	D. and H.
Connell Anthracite Mining Co.						
Connell, .....	Sullivan, .....	W. L. Connell, .....	Scranton, .....	.....	.....	Lehigh Valley
Northern Anthracite Coal Co.						
Murray, .....	Sullivan, .....	M. J. Murray, Sr., ..	Dunmore, .....	P. J. Murray, .....	Lopez, .....	Lehigh Valley
Northwest Coal Co.						
Northwest, .....	Lackawanna, ..	F. H. Hemedright, .	Scranton, .....	Thomas M. Jenkins, ..	Simpson, .....	O. and W., and Erle
O'Boyle-Foy Anthracite Coal Co.						
O'Boyle-Foy, .....	Sullivan, .....	M. W. O'Boyle, .....	Pittston, .....	M. J. Clemens, .....	Murray, .....	Lehigh Valley
Carbondale Coal Mining Co.						
Bolands, .....	Lackawanna, ..	John J. Bolands, .....	Carbondale, .....	John J. Bolands, ....	Carbondale, .....	D. and H.
Clinton Falls Coal Co.						
Clinton Falls, .....	Wayne, .....	Harry C. Birbeck, ...	Forest City, .....	Harry C. Birbeck, ..	Scranton, .....	O. and W.
Lincoln Hill Coal Co.						
Barlons, .....	Lackawanna, ..	T. W. Parry, .....	Carbondale, .....	T. W. Parry, .....	Carbondale, .....	D. and H.
Wachna-Taylor Anthracite Coal Co.						
Wachna-Taylor, .....	Sullivan, .....	E. J. Taylor, .....	Mildred, .....	E. J. Taylor, .....	Mildred, .....	Lehigh Valley
Stillwater Coal Co.						
Stillwater, .....	Susquehanna, ..	William Lewis, .....	Forest City, .....	William Lewis, .....	Forest City, .....	Erte

§Formerly Kandall and Schaad, operated by Randall and Schaad Brothers Coal Company, Limited; Wachna-Taylor Anthracite Coal Company took charge Sept. 15.

TABLE 2.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured, quantity of powder, dynamite and permissible explosives used, etc.

Names of Operators and Collieries	County	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives			Number of horses and mules
										Number of pounds of powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used	
Hillside Coal and Iron Co. Forest City, .....	Susquehanna, ..	465,515	42,683	6,957	515,155	231	1,305	6	5	467,675	.....	89,890	79
Hudson Coal Co. Clinton, .....	Lackawanna, ..	303,912	29,323	3,696	336,931	240	777	1	3	437,875	58,670	.....	93
Clinton Washery, .....	Wayne, .....	130,968	.....	.....	130,968	183	20	.....	.....	.....	.....	.....	.....
Totals, .....	.....	434,880	29,323	3,696	467,899	.....	797	1	3	437,875	58,670	.....	93
Connell Anthracite Mining Co. Connell, .....	Sullivan, .....	220,085	26,000	1,710	247,795	227	494	2	2	59,850	14,418	.....	9
Northern Anthracite Coal Co. Murray, .....	Sullivan, .....	192,946	5,612	2,919	201,477	211	276	.....	.....	148,400	1,400	.....	39
Northwest Coal Co. Northwest, .....	Lackawanna, ..	160,890	16,089	919	177,898	230	383	.....	2	149,500	9,801	.....	48
O'Boyle-Foy Anthracite Coal Co. O'Boyle-Foy, .....	Sullivan, .....	112,977	5,460	2,600	121,037	220	192	.....	5	130,825	13,000	.....	13
Carbondale Coal Mining Co. Bolands, .....	Lackawanna, ..	11,384	4,500	12,288	28,172	244	87	.....	1	31,250	4,250	.....	14
Clinton Falls Coal Co. Clinton Falls, .....	Wayne, .....	12,300	200	210	12,710	172	51	.....	.....	500	12,500	.....	4



TABLE 2.—Part 2

Names of Operators	County	Number of Boilers			Locomotives			Total horse power	Number of steam engines of all classes	Total horse power	Number of pumps delivering water to surface	Capacity in gallons per minute	Quantity delivered to surface per minute—gallons	Number of electric dynamos	Number of air compressors
		Cylindrical	Horse power	Tubular	Horse power	Total horse power	Steam								
Hillside Coal and Iron Co., .....	Susquehanna, ..	.....	.....	29	3,450	3,450	5	.....	16	3,475	6	2,000	1,200	.....	.....
Hudson Coal Co., .....	Lackawanna, ..	25	737	1	125	862	1	.....	.....	1,815	7	4,200	1,400	.....	4
Connell Anthracite Mining Co., .....	Wayne, .....	.....	.....	6	1,200	1,200	.....	.....	12	1,532	1	450	450	.....	.....
Northern Anthracite Coal Co., .....	Sullivan, .....	.....	.....	5	450	450	.....	.....	.....	1,400	3	3,150	1,700	.....	4
Northwest Coal Co., .....	Lackawanna, ..	.....	.....	4	900	900	3	.....	.....	1,820	1	.....	.....	.....	.....
O'Boyle-Foy Anthracite Coal Co., ..	Sullivan, .....	.....	.....	2	550	550	.....	.....	.....	1,825	3	.....	160	.....	2
Carbondale Coal Mining Co., .....	Lackawanna, ..	.....	.....	3	225	225	.....	.....	.....	140	.....	.....	.....	.....	.....
Clinton Falls Coal Co., .....	Wayne, .....	.....	75	1	75	150	.....	.....	.....	175	1	60	40	.....	.....
Lincoln Hill Coal Co., .....	Lackawanna, ..	.....	.....	1	65	65	.....	.....	.....	40	.....	.....	.....	.....	.....
Wacuna-Taylor Anthracite Coal Co., .....	Sullivan, .....	.....	.....	1	80	80	.....	.....	.....	75	1	200	200	.....	.....
Stillwater Coal Co., .....	Susquehanna, ..	.....	.....	2	80	80	3	1	.....	140	.....	.....	.....	.....	.....
Totals, .....	.....	26	812	55	7,200	8,012	12	1	28	9,657	22	10,260	5,150	.....	9







TABLE 4.—Fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 12	Frank Gripofski, .....	Lithuanian, .....	Laboret, .....	28	M.	1	...	Forest City, ...	Susquehanna, ..	Killed by fall of roof at face of chamber.
Feb. 21	John Corcoran, .....	American, .....	Miner, .....	46	M.	1	5	Bartons, .....	Lackawanna, ..	Killed by fall of rock at face of chamber.
Feb. 26	Julius Camolla, .....	Italian, .....	Miner, .....	24	S.	...	...	Forest City, ...	Susquehanna, ..	Fatally burned by explosion of powder at face of chamber.
March 5	Joseph Youcavage, ..	Lithuanian, .....	Miner, .....	35	M.	1	3	Forest City, ...	Susquehanna, ..	Fatally injured by explosion of blast in cross-cut.
	Charles Fisher, .....	Polish, .....	Driver, .....	21	S.	...	...	Forest City, ...	Susquehanna, ..	Fatally injured by explosion of blast in cross-cut.
	Vincent Lushefski, ..	Polish, .....	Slatepicker, ..	16	S.	...	...	Connell, .....	Sullivan, .....	Instantly killed by being caught in elevators, Outside.
April 12	Edward Monnish, .....	Austrian, .....	Loader, .....	24	S.	...	...	Connell, .....	Sullivan, .....	Fatally injured by railroad cars. Outside.
Aug. 29	William Munchak, ...	Slavonian, ...	Chargeman, ...	21	S.	...	...	Forest City, ...	Susquehanna, ..	Killed by fall of roof at face of gangway.
Aug. 30	Graman Awalavich, ..	Lithuanian, ...	Laboret, .....	32	M.	1	2	Clinton, .....	Lackawanna, ..	Killed by fall of rock at face of chamber.
Dec. 3	Frank Fisher, .....	Austrian, ...	Miner, .....	30	S.	...	...	Stillwater, ...	Susquehanna, ..	Killed by fall of roof at face of chamber.
	John Lenyoh, .....	Austrian, ...	Tracklayer, ..	41	M.	1	8	Forest City, ...	Susquehanna, ..	Electrocuted. A mine tie that he was carrying came in contact with an electric wire of 220 volts and he was thrown to the ground with much force, his head striking rail on haulage road.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date of accident	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 1	Fred Gore, .....	American, ..	Engineer, .....	21	S.	CConnell, .....	Sullivan, .....	Arm fractured by falling and striking it against a wheel. Outside.
17	Frank Derbing, .....	Polish, .....	Miner, .....	25	S.	Forest City, .....	Susquehanna, ..	Jaw and nose fractured by fall of rock at face of chamber.
22	Daniel Casoy, .....	American, ..	Driver, ....	27	S.	O'Boyle-Foy, .....	Sullivan, .....	Hips squeezed by car in gangway.
Feb. 1	John Sarfield, .....	Italian, .....	Laborer, .....	23	M.	O'Boyle-Foy, .....	Sullivan, .....	Slightly injured by fall of rock at face of chamber.
2	Earle Davis, .....	American, ..	Laborer, .....	19	S.	Barltons, .....	Lackawanna, ..	Wrist broken by cars. Outside.
14	Ignatz Kofia, .....	Austrian, ..	Laborer, .....	42	S.	Clinton, .....	Lackawanna, ..	Elbow lacerated by falling while loading car at face of chamber.
March 25	Adam Buslavage, ....	Lithuanian, ..	Laborer, .....	21	S.	Forest City, .....	Susquehanna, ..	Arm fractured by fall of rock at face of chamber.
26	Fred Van Fleet, .....	American, ..	Miner, .....	40	M.	Northwest, .....	Lackawanna, ..	Leg fractured by falling in chamber.
July 12	Joseph Higgins, .....	American, ..	Miner, .....	45	M.	Bolands, .....	Lackawanna, ..	Leg fractured by fall of rock near face of chamber.
20	Anthony Knudges, ....	Lithuanian, ..	Miner, .....	32	M.	Forest City, .....	Susquehanna, ..	Ribs fractured by fall of rock at face of chamber.
10	John Jones, .....	English, ..	Driver, .....	24	S.	Forest City, .....	Susquehanna, ..	Collar bone fractured by cars on gangway.
15	John Marbeet, .....	Polish, .....	Machine-helper,	27	S.	CConnell, .....	Sullivan, .....	Ankle fractured by fall of coal at face of chamber.
28	James Caccio, .....	Italian, .....	Miner, .....	25	M.	O'Boyle-Foy, .....	Sullivan, .....	Burned by explosion of powder at face of chamber.
	Paul Marret, .....	Italian, .....	Laborer, .....	24	S.	O'Boyle-Foy, .....	Sullivan, .....	Burned by explosion of powder at face of chamber.
18	William Hunsinger, ..	American, ..	Driver boss, ....	25	M.	O'Boyle-Foy, .....	Sullivan, .....	Leg fractured by fall of rock on gangway.
Nov. 6	Thomas Bailey, .....	English, ..	Miner, .....	49	M.	Forest City, .....	Susquehanna, ..	Arm fractured by fall of rock at face of chamber.
13	Wyckick Skrocky, ....	Polish, .....	Miner, .....	40	M.	Clinton, .....	Lackawanna, ..	Foot severely injured by a collar falling on it at face of chamber.
26	Michael Dresco, .....	Russian, ....	Driver, .....	25	M.	Clinton, .....	Lackawanna, ..	Injured by falling when the mule that he was riding stumbled. Outside.
Dec. 6	John Lichinski, .....	Polish, .....	Laborer, .....	24	M.	Northwest, .....	Lackawanna, ..	Leg cut off by cars. Outside.

## CONDITION OF COLLIERIES

## HILLSIDE COAL AND IRON COMPANY

Forest City Colliery.—Ventilation, drainage and condition as to safety, good.

## HUDSON COAL COMPANY

Clinton Colliery.—Ventilation, drainage and condition as to safety, good.

## CONNELL ANTHRACITE MINING COMPANY

Connell Colliery.—Ventilation, drainage and condition as to safety, good.

## NORTHERN ANTHRACITE COAL COMPANY

Murray Colliery.—Ventilation, drainage and condition as to safety, good.

## NORTHWEST COAL COMPANY

Northwest Colliery.—Ventilation, roads and drainage, fair. Other conditions, good.

## O'BOYLE-FOY ANTHRACITE COAL COMPANY

O'Boyle-Foy Colliery.—Ventilation, drainage and condition as to safety, good.

## CARBONDALE COAL MINING COMPANY

Bolands Colliery.—Ventilation, drainage and condition as to safety, fair.

## CLINTON FALLS COAL COMPANY

Clinton Falls Colliery.—Ventilation, drainage and condition as to safety, fair.

## LINCOLN HILL COAL COMPANY

Bartons Colliery.—Ventilation, drainage and condition as to safety, fair.

## WACHNA-TAYLOR ANTHRACITE COAL COMPANY

Wachna-Taylor Colliery.—Ventilation, drainage and condition as to safety, good.

## STILLWATER COAL COMPANY

Stillwater Colliery.—Ventilation fair. Drainage and condition as to safety, good.

## IMPROVEMENTS

## HUDSON COAL COMPANY

Clinton Colliery.—Completed a 12-inch pump hole 400 feet deep to deliver water from Clifford vein to surface; also a drift 200 feet long to surface to drain No. 11 slope. Installed a triple pump 12 by 12 driven by 100 horse power motor, and a 20 foot fan and a 17 foot fan equipped with electric power. Also installed  $2\frac{1}{2}$  miles of pole line and wire to carry electric power to Clinton washery and pumping plant, etc.

## CONNELL ANTHRACITE MINING COMPANY

Connell Colliery.—Built a new breaker, replacing the one burned in February, 1902; and installed an electric pump of 400 gallons per minute capacity. The work of driving a new drift known as "water drift" is nearly completed.

## NORTHERN ANTHRACITE COAL COMPANY

Murray Colliery.—Completed the work of replacing all wooden buildings inside with buildings of concrete construction. Also installed a gasoline mine motor of the George D. Whitcomb make.

## O'BOYLE-FOY ANTHRACITE COAL COMPANY

O'Boyle-Foy Colliery—Inside.—Installed a 30 horse power engine and scraper line in the "C" vein for the purpose of working out this vein. Built a solid concrete mule barn.

Outside.—Built a solid concrete oil and powder house.





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